L 12898-66 EWT(m)/ETC(F)/EWG(m)/EWP(j)/T/EWP(t)/EWP(b) IJP(c) DS/JD/RM

ACC NR: AP5027580 SOURCE CODE: UR/0364/65/001/011/1344/1351

AUTHOR: Alpatova, N. M.; Kessler, Yu. M.; Gorbanev, A. I.

ORG: Institute of Electrochemistry, Academy of Sciences SSSR (Institut elektrokhimii Akademii nauk SSSR)

TITLE: Anodic behavior of silicon in some nonaqueous solvents. II.

SOURCE: Elektrokhimiya, v. 1, no. 11, 1965, 1344-1351

TOPIC TAGS: silicon, oxidation, organic solvent, electrochemistry, organosilicon compound, electroplating

ABSTRACT: This article reports on the continuation of work previously reported in *Elektrokhimiya*, 1, 844 (1965). To determine the nature of the anodic reaction of the first polarization wave during the dissolution of Si in chloride solutions in N-methylformaamide solvent, polarization studies were conducted with stationary and rotating electrodes. Measurements were also made in methylchlorosilane solutions. *p*-type silicon of 0.045 ohm·cm resistivity and *n*-type silicon of 0.040 ohm·cm resistivity were used as anodes. Polarization measurements were made with the lower faces of cylinders 1.8-3.0 mm in diameter, pressed into teflon. The faces of the silicon cylinders were successively electro-

UDC: 541.13

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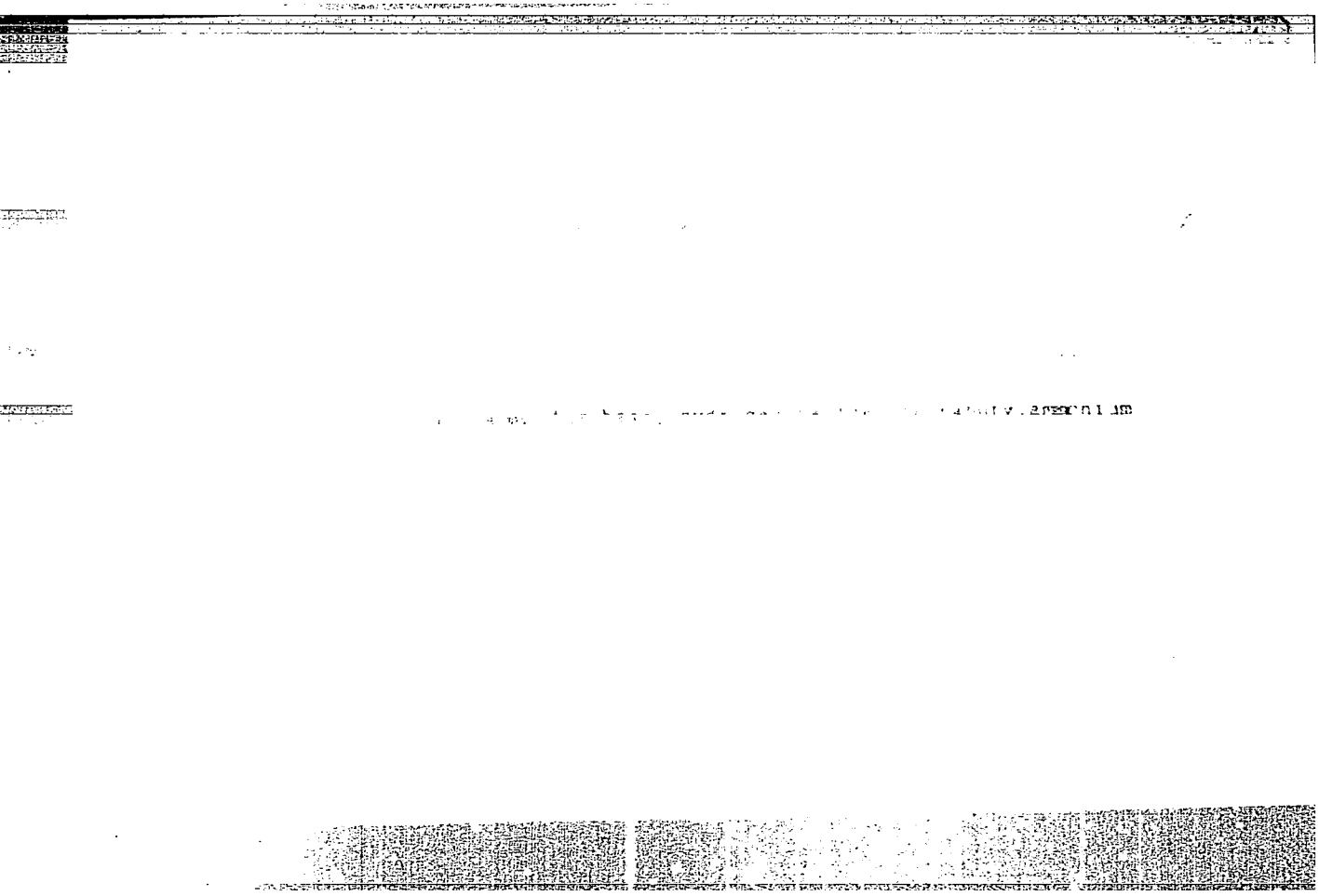
plated with palladium and copper and copper leads were soldered to them. The potential of the anode was measured with respect to the aqueous saturated calomel electrode. Electrode polarization was both galvanostatic and potentiostatic. The anode polarization curve for *p*-type silicon in N-methylformaamide solutions has two waves, where the first wave corresponds to the dissolution of silicon with the participation of solvent and the second wave corresponds to the oxidation of the solvent. The reaction is inhibited prior to the second wave, which is explained on the basis of adsorption of chloride ions on the electrode surface. It was shown that the holes participate in the anodic dissolution of silicon just as in the case of aqueous solutions. It is concluded that the results of this work will be useful in the preparation of silicon surface relatively free of oxide film, electropolishing of silicon, and production of new organosilicon compounds.7 The authors wish to express their gratitude to L. I. Krishtalik for the valuable remarks which he made in the course of the discussion of the results. Orig. art. has: 7 figures.

SUB CODE: 07/ SUBM DATE: 30Mar65/ ORIG REF: 006/ OTH REF: 004

KESSLER, Yu.M.; POVAROV, Yu.M.

Change in the structure of a solvent in a coulombic field of ions and the thermodynamics of strong electrolyte solutions. Zhur. struk. khim. 6 no.3:361-370 My-Je '65. (MIRA 18:8)

1. Institut elektrokhimii AN SSSR.



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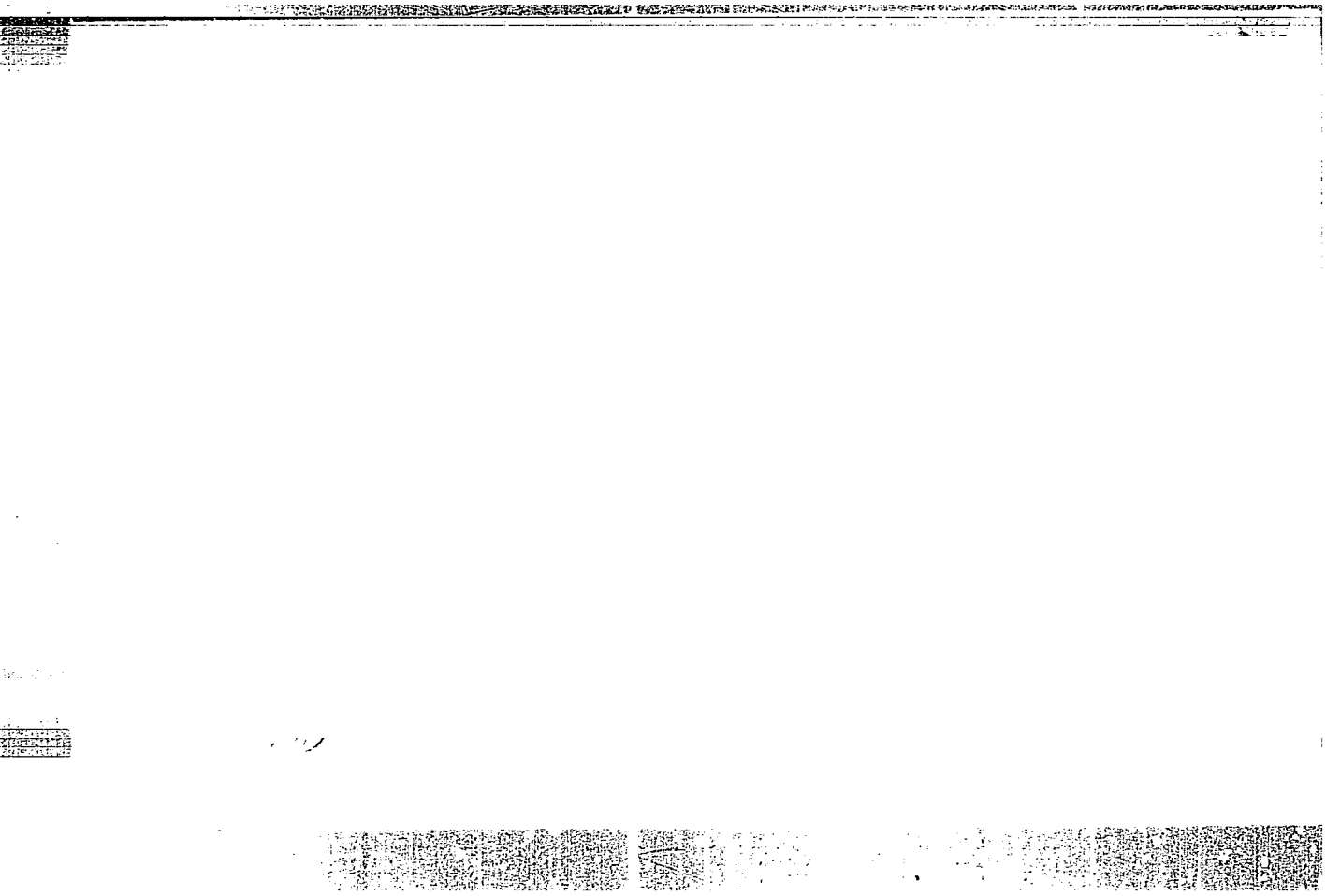


ALPATOVA, N.M.; KESSLER, Yu.M.; GORBANEV, A.I.

Interaction between methylchlorosilanes with complex compounds of tetra-substituted ammonium halides and HCl. Zhur. neorg. khim. 10 no.7:1566-1571 Jl '65. (MIRA 18:8)

1. Institut elektrokhimii AN SSSR.

KESSLER, Yu.M.; OSIPOV, O.R.

Electromagnetic chopper with a wide regulation range of the operational pulses. Zhur.fiz.khim. 39 no.11:2847-2848 N '65. (MIRA 18:12)

1. Institut elektrokhimii AN SSSR.

KESSLER, Yu.V.

The MS-3-type multiple-system circular knitting machine.
Biul.tekh.-ekon.inform. no.8:51-53 '59. (MIRA 13:1)
(Knitting machines)

KESSLER, Yu.V.

The MS-4 circular knitting machine. Biul. tekh.-ekon. inform. no.10:54-55 '59. (MIRA 13:3)
(Knitting machines)

ACCESSION NR: AP4041789 S/0191/64/000/007/0065/0066

AUTHOR: Kestek'man, V.M. ; Fel'dman, D. I.; Kestel'man, N. Ya.

TITLE: Abrasion resistance of polyformaldehyde used in slide bearings

SOURCE: Plasticheskiye massy*, no. 7, 1964, 65-66.

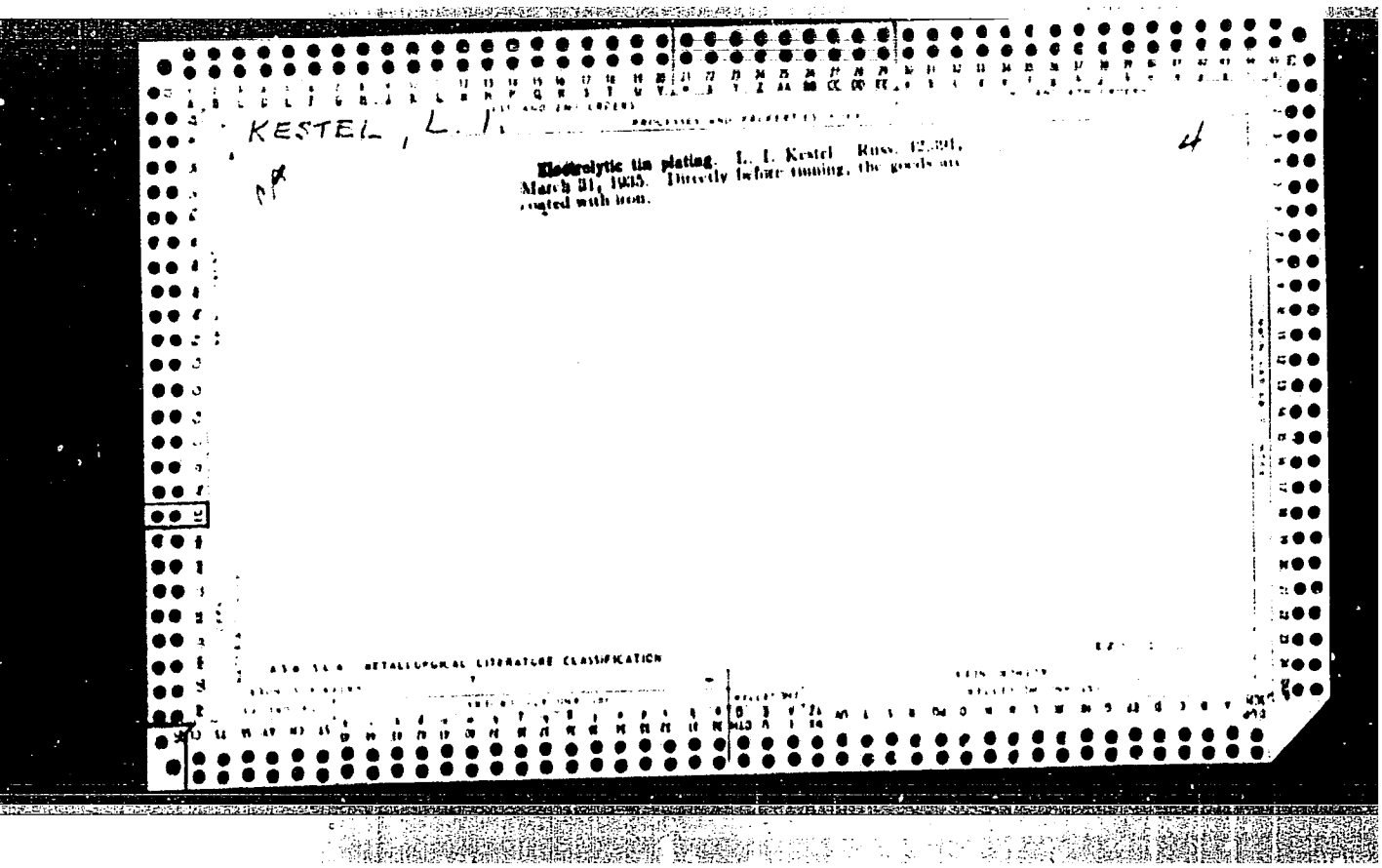
TOPIC TAGS: polyformaldehyde, slide bearing , polyformaldehyde sleeve, abrasion, Kapron sleeve, polyformaldehyde abrasion, automobile bearing

ABSTRACT: The main characteristics of polyformaldehyde are tabulated, a formula is presented for the calculation of the coefficient of friction, and the results of laboratory tests of bearings with polyformaldehyde sleeves are discussed. Using the Shkoda-Savina and MI-IM machines, the wear of polyformaldehyde and Kapron sleeves was compared in relation to the load, duration of friction and specific pressure. The results showed that polyformaldehyde was markedly superior to Kapron. This was confirmed by extensive laboratory tests carried out at the "Kommunar" auto plant with the front suspension bearings of the "Zaporozhets" automobile, manufactured of polyformaldehyde, Kapron or a metalloceramic material (Fe-Cu-C). These tests

Cc Card 1/2

KESTEL', A.S.

Casting large pieces with reduced machining allowance. Lit.proizv. no.2 supplement:18-21 '56. (MLRA 9:7)
(Steel castings)


KESTEL, L. I.

4

Electrolytic tin plating. L. I. Kestel Russ. 12,301, March 31, 1935. Directly before tinning, the goods are treated with iron.

KESTEL' , L. P.

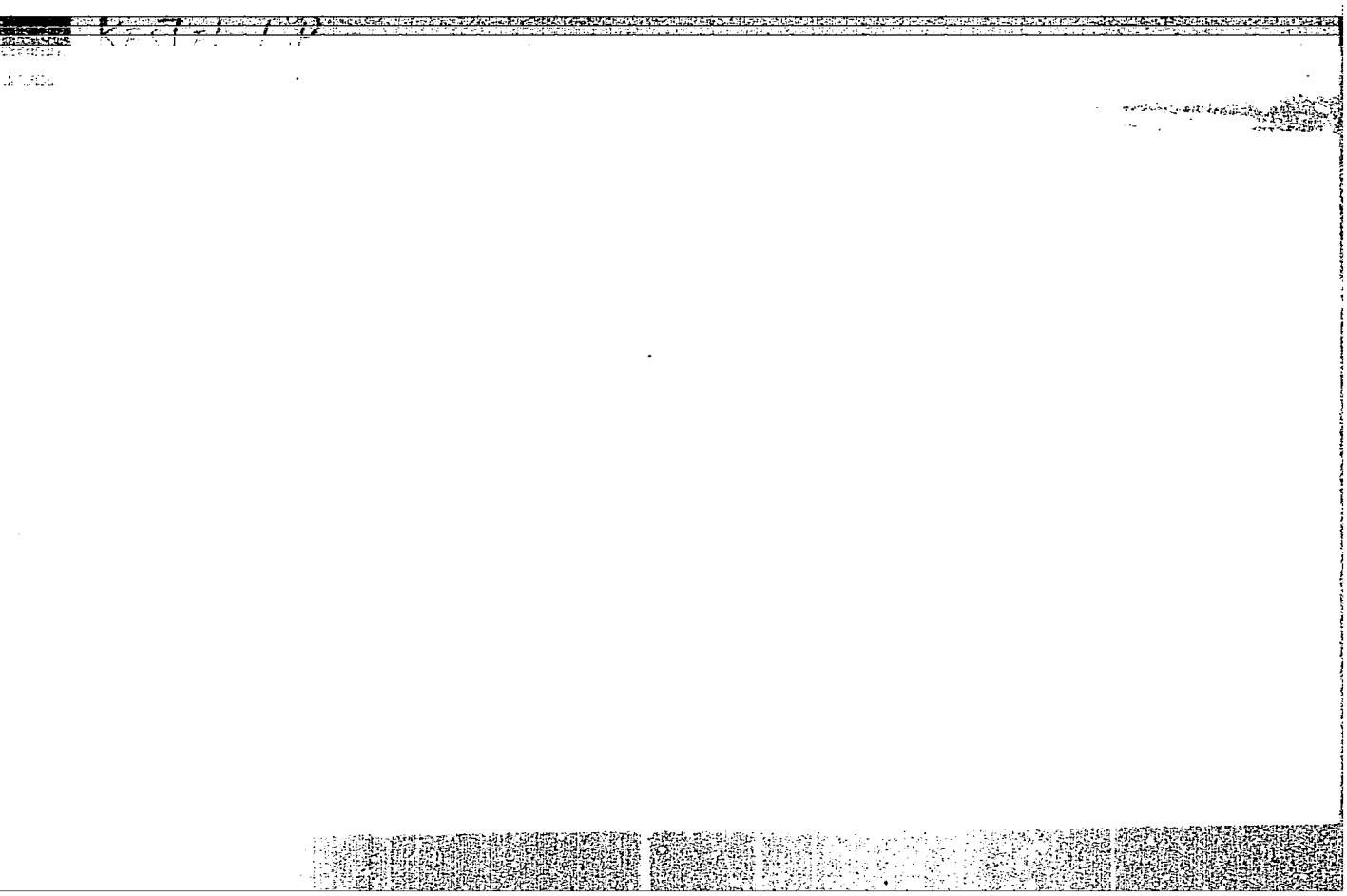
RT- 1567 (The study of corrosion stability of boiler steels under the action of high temperature steam) Izuchenie korrozionnoi stoikosti kotel'nykh stalei pod vozdeistviem para vysokikh temperatur. Pages 62-76 from:
KORROZIIA METALLOV POD NAPRIAZHENIEM I SPOSOBY ZASHCHITY Moscow, 1950, (Orginal Russian source unavailable for review)

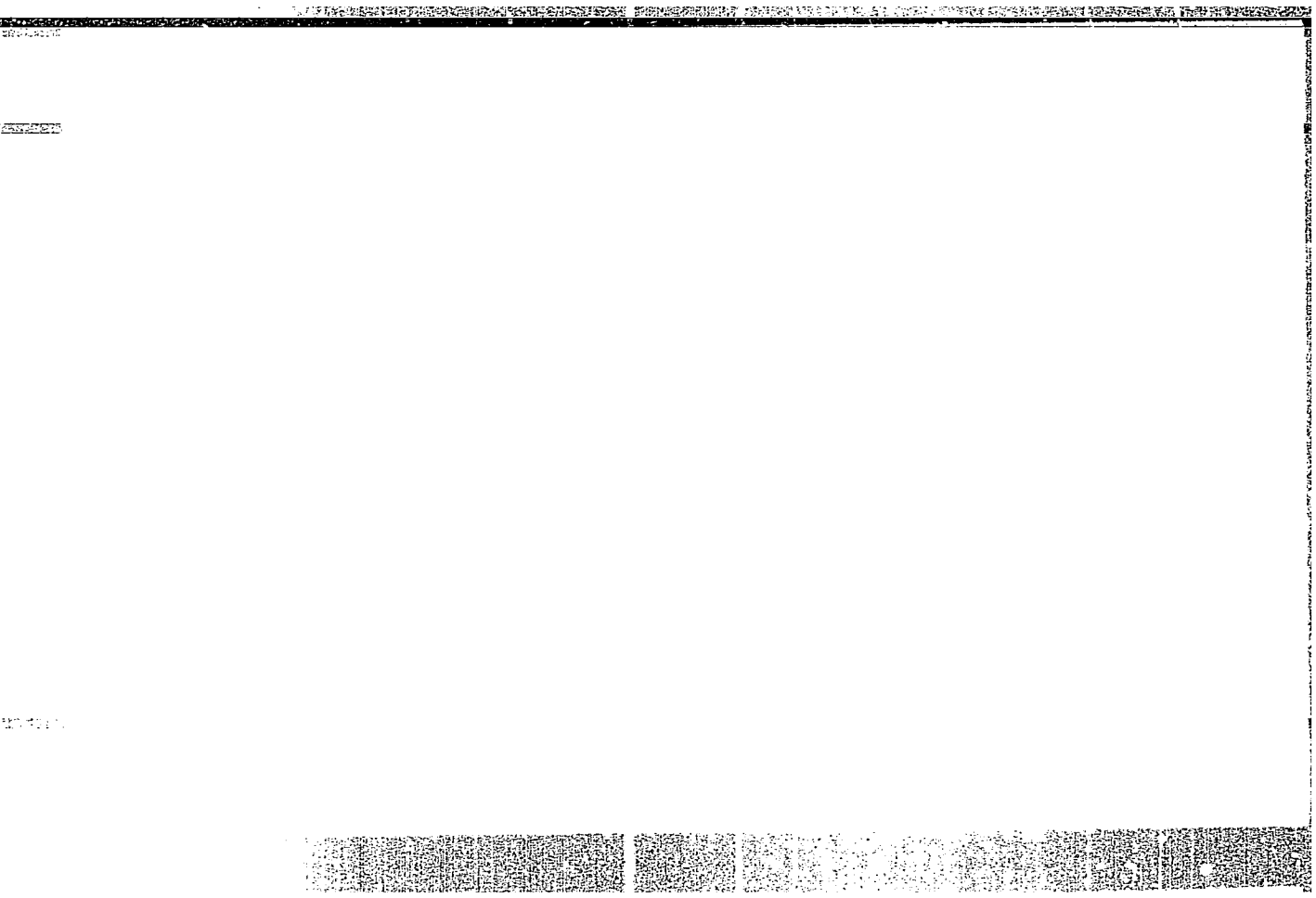
KOSTIL', I. P. (Engr) and PAVLOVSKAYA, Ye. A. Cand Tech Sci

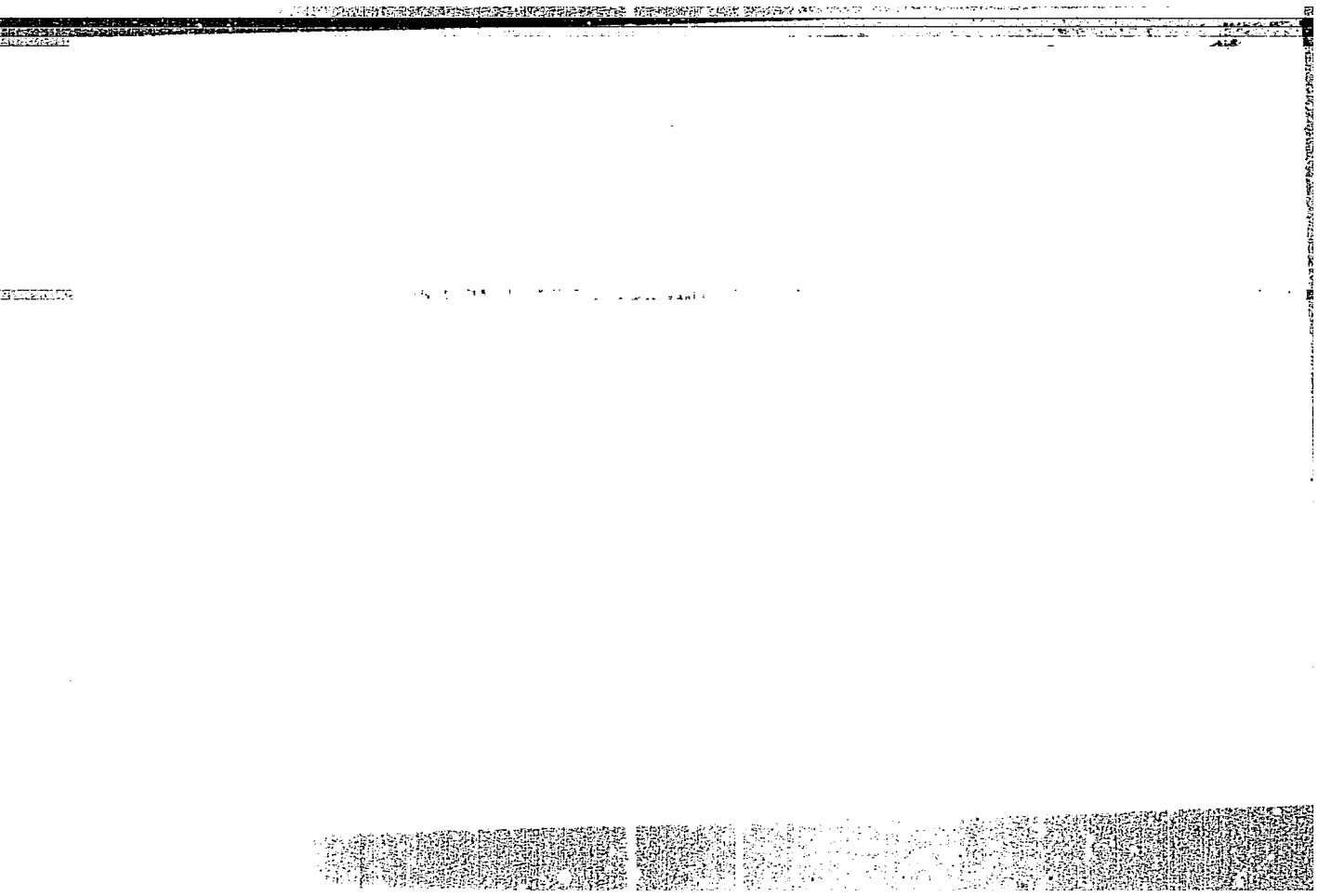
"Method of Testing Steel for Gas Corrosion at High Temperatures," one of eight articles appearing in the book: "Investigation of the Stress Corrosion of Metals," edited by G.V.Akimov, Mashgiz, Moscow, 1953

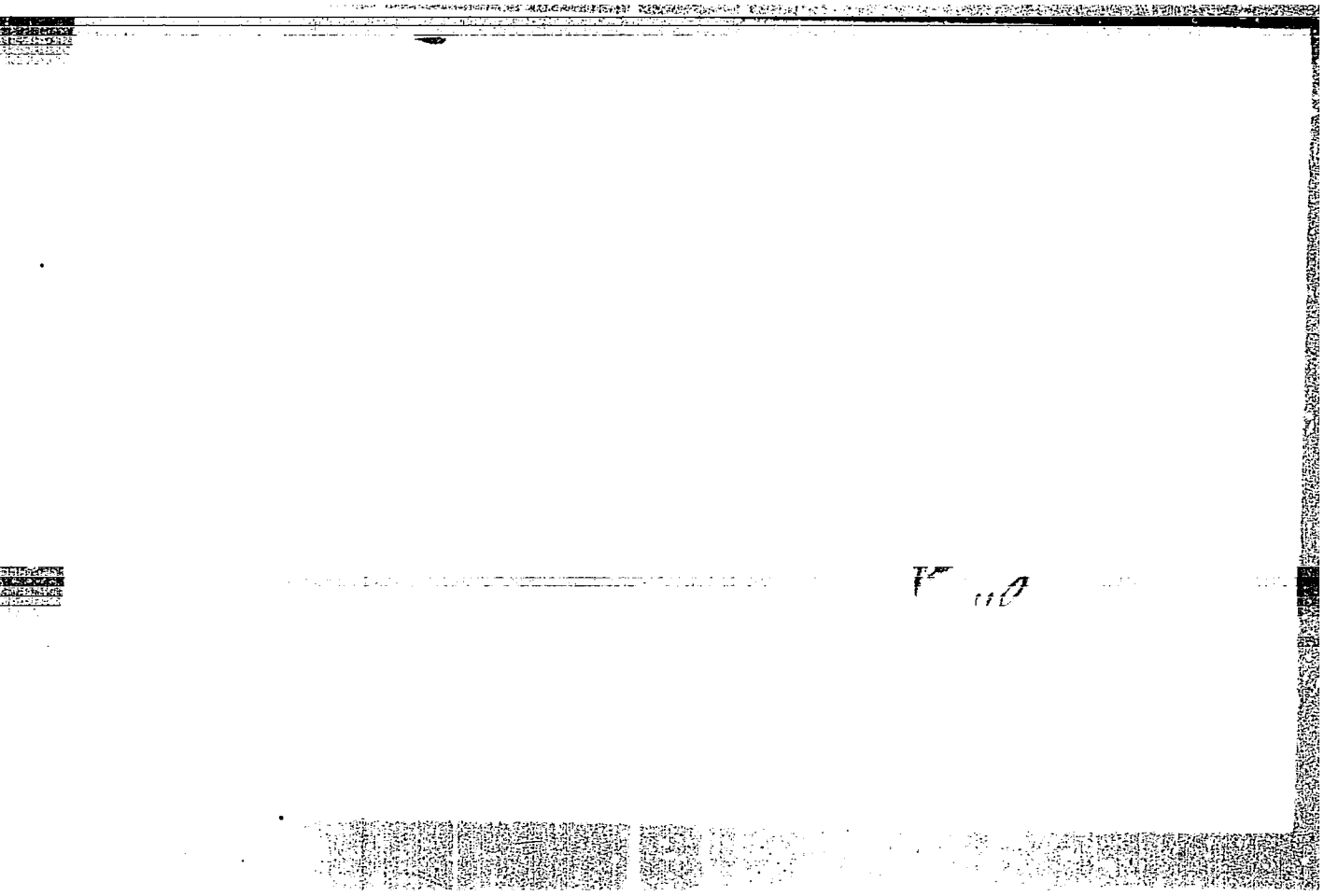
Central Sci Res Inst of Technology and Machine Bldg

Translation No. 31586, 15 Dec 55









DAVIDOVSKAYA, Yelena Aleksandrovna, kand. tekhn. nauk; KESTEL', Lyubov' Prokof'yevna, inzh.; URYUPINA, Yekaterina Ivanovna, kand. tekhn. nauk; NAGAZINA, M.F., inzh., ved. red.; SAMOKHOTSKIY, A.I., inzh., red.; PONOMAREV, V.A., tekhn.red.

[Effect of heat treatment on the tendency in stainless steel toward intercrystalline corrosion] Vliianie termicheskoi obrabotki na sklonnost' nerzhaveiushchikh stalei k mezhkristallitnoi korrozii. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 11 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 13. No.M-58-15/1) (MIRA 16:3)
(Steel, Stainless—Corrosion)
(Metals, Effect of temperature on)

DAVIDOVSKAYA, Ye.A., kand.tekhn.nauk; KESTEL', L.P., inzh.

Investigating the heat resistance of alloyed steels in various gas media. Energomashinostroenie 4 no.11:15-19 N '58.
(Steel alloys) (MIRA 11:11)

129-58-8-6/16

AUTHORS: Davidovskaya, Ye. A., Candidate of Technical Science and Kestel', L. P., Engineer

TITLE: Investigation of the Influence of Super-Heated Water Vapour on the Long Duration Strength of Austenitic Steel (Issledovaniye vliyaniya peregretogo vodyanogo para na dlitel'nuyu prochnost' austenitnoy stali)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 8, pp 29-33 (USSR)

ABSTRACT: The aim of the work described in this paper was to study the influence of super-heated steam on the long duration strength of the Steel EI257 at 600°C. The test specimens were produced from cut-offs of tubes of 102/68 mm; the blanks were first hardened from 1150°C in water. The chemical composition and the mechanical properties of the steel of the individual specimens are entered in Tables 1 and 2, p 30. The specimens were of 4 mm dia. with a test length of 25 mm. The long duration strength tests were effected on test machines VP-8. The test rig for testing in the gaseous medium consisted of a steam generator, a steam super-heater and a furnace, a schematic sketch of which is reproduced in Fig.1, p.30. Comparative tests

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Investigation of the Influence of Super-Heated Water Vapour on the Long Duration Strength of Austenitic Steel

were effected for two types of heat treatment, namely, hardening and hardening followed by tempering at 750°C for ten hours. After hardening, the structure consisted of austenite with a small quantity of carbide separations predominantly along the grain boundaries; in this state the steel is chemically stable and does not tend to develop inter-crystallite corrosion. However, after short duration annealing at 600-800°C considerable quantities of the carbide phase separate out from the solid solution; the chemical stability of the steel is appreciably reduced and it becomes prone to inter-crystallite corrosion. Therefore, the investigations were carried out using two differing types of heat treatment and the results are entered in Table 3 and graphed in Fig.2a. It can be seen that the time to failure is practically equal in super-heated steam and in air; it can be seen from Fig.2 that the stress-time to failure relation is represented in logarithmic coordinates by a straight line without any discontinuity. After tempering (at 750°C for ten hours), the steel showed great

Investigation of the Influence of Super-Heated Water Vapour on the Long Duration Strength of Austenitic Steel

inclination to inter-crystallite corrosion and was less stable and in such a state the steel must not be used for operation in liquid media. The actual results of tensile tests at 600°C in such a state are entered in Table 4 (for air and super-heated steam). The long duration strength of this steel was also investigated in super-heated steam at 600°C in presence of a molten alkali and the results are entered in Table 5. The carried out tests indicate that pure super-heated steam which does not contain any salt admixtures does not reduce the strength of this steel at high temperatures. However, the presence of salts which become deposited on such steel may reduce appreciably the strength characteristics and, therefore, in practical operation it is essential to purify carefully the super-heated steam from salt contaminations.

129-58-8-6/16

Investigation of the Influence of Super-Heated Water Vapour on the Long Duration Strength of Austenitic Steel

There are 3 figures, 5 tables and 1 Soviet reference.

ASSOCIATION: TsNIITMASh

1. Steel--Mechanical properties 2. Steel--Test methods
3. Steel--Temperature factors 4. Steam--Applications

Card 4/4

DAVIDOVSKAYA, Ye.A., kand.tekhn.nauk; KESTEL', L.P., inzh.

Heat resistance of austenite steels in gaseous media.
[Trudy] TSNIITMASH 100:59-69 '59. (MIRA 13:7)
(Heat-resistant alloys)
(Steel--Metallurgy)

18(7) PHASE I BOOK EXPLOITATION SOV/2296

Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya

Korroziya i zashchita metallov v mashinostroyenii (Corrosion and Protection of Metals in the Machine-building Industry) Moscow, Mashgiz, 1959. 347 p. (Series: Its: [Sbornik] kn. 92) 3,500 copies printed.

Ed.: A. V. Ryabchenkov, Doctor of Chemical Sciences, Professor; Ed. of Publishing House: A. I. Sirotin, Engineer; Tech. Ed.: B. I. Model'; Managing Ed. for Literature on Heavy Machine Building (Mashgiz): S. Ya. Golovin, Engineer.

PURPOSE: This collection of articles is intended for designers, technologists, and industrial and research workers concerned with corrosion and corrosion protection of metals.

COVERAGE: This collection of articles deals with problems of corrosion and metal protection under investigation at TsNIITMASh during the past two years. The articles discuss stress corrosion, intergranular corrosion, scale and heat resistance of austenitic steels in gaseous media, protective coating, fretting corrosion, and resistance of metals to cavitation. No personalities are mentioned. References follow each article.

TABLE OF CONTENTS:

Nikiforova, V.M., N.I. Tsvyezin [Candidate of Physical and Mathematical Sciences], N.A. Reshetkina, and A.V. Yevgrafov [Engineer]. Method of Determining the Tendency of Steel Toward Intergranular Corrosion by Utilizing High-frequency Resonance Instruments 85

PART II. GAS CORROSION AND ITS EFFECT ON THE HEAT-RESISTANCE PROPERTIES OF AUSTENITIC STEELS

Davidovskaya, Ye.A. [Candidate of Technical Sciences], and L.P. Kestel' [Engineer]. Scale-resisting Alloy Steels in Different Gas Media 95
The authors discuss the mechanism of high-temperature oxidation of irons and steels, gas media, including temperature, oxide films of austenitic steels, and rates of corrosion.

Kestel', L.P., and Ye.A. Davidovskaya. Effect of a Concentration of Sulfur Dioxide and Steam on the Corrosion of Austenitic Steels at High Temperatures 109

Davidovskaya, Ye.A. Long-time Rupture Strength of Alloy Steels in Superheated Steam 125
The author investigates the behavior of EI417 and EI724 steels under the effect of steam at 575° to 610°C.

Maksimov, A.I. [Engineer], P.V. Sorokin [Engineer], and S.G. Vedenkin, [Professor]. Effect of Corrosive Gas Media on Long-time Rupture Strength of Austenitic Sheet Steels 139
The present investigation was made by the authors to determine the effect of fuel combustion products on three different cast steels used in gas turbine construction.

Nikiforova, V.M., N.A. Reshetkina, and V.S. Smurov [Engineer]. Study of Decay and Corrosion Resistance of Various Materials for Carbon Bisulfide Retorts Under Operating Conditions 158
The authors make recommendations for the most suitable metals for inner and outer linings of carbon bisulfide retorts.

Kovalev, Ye.A. [Engineer], and S.G. Vedenkin. Effect of Vanadium Contained in Heavy Fuel on Scale and Heat Resistance of Alloys Used in Gas Turbines 179
The authors present a survey of Soviet and non-Soviet literature on this subject and discuss methods of investigation.

PART III. PROTECTIVE COATINGS

Rykova, A.V. [Candidate of Technical Sciences], K.P. Zommer [Candidate of Technical Science], V.Ye. Khromov [Engineer] and Ye.I. Buday [Senior Technician]. Investigating the Possibility of Applying Wear-resistant Chrome Plating to Worm Gears 210
Investigation is made on the basis of the similarity to the process of porous chrome plating of piston rings, cylinder sleeves of combustion engines, and other parts working under high friction.

Khromov, V.Ye. Effect of Chrome Plating on the Wear Resistance of Mating parts 224
The author studies the effect of cathodic current density and temperature of the electrolyte on the wear resistance of the deposit and the plated insert.

DAVIDOVSKAYA, Ye.A., kand. tekhn. nauk; KESTEL', L.P., inzh.

Heat resistance of alloyed steel in various gas media. Trudy TSNIITMASH 92:93-108 '59. (MIRA 12:8)
(Steel—Corrosion)

KRSTEL', I.P., inzh.; DAVIDOVSKAYA, Ye.A., kand. tekhn. nauk

Effect of the concentration of sulfur dioxide and water vapors on the corrosion of austenitic steel at high temperatures. Trudy TSNIITMASH 92:109-124 '59. (MIRA 12:8)
(Steel--Corrosion) (Sulfur dioxide)

KESTEL, L.P.

PHASE I BOOK EXPLOITATION SOV/4535

Vsesoyuznyy sovet nauchno-tekhnicheskikh obshchestv

Mezhkristallitnaya korroziya i korroziya metallov v napryazhennom sostoyanii (Intercrystalline and Stress Corrosion of Metals) Moscow, Mashgiz, 1960. 358 p. 3,000 copies printed.

Ed.: I.A. Levin, Candidate of Technical Sciences; Ed. of Publishing House: I.I. Lesnichenko, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on Metalworking and Instrument Making (Mashgiz): V.V. Rzhavinskiy, Engineer; Editorial Board: I.A. Levin, Candidate of Technical Sciences (Chairman), V.P. Batrakov, Candidate of Technical Sciences, V.M. Nikiforova, Candidate of Technical Sciences, and A.V. Turkovskaya, Candidate of Technical Sciences.

PURPOSE: This collection of articles is intended for technical personnel concerned with problems of corrosion of metals.

COVERAGE: The collection contains discussions of intercrystalline corrosion of stainless steels and stress corrosion of carbon steels, low-alloy and stainless steels, and light-weight and nonferrous alloys. The tendency of steels of various composition and system to corrode under certain conditions is discussed and the nature of corrosion and corrosion cracking is analysed. No personalities are mentioned. Most of the articles are accompanied by bibliographic references, the majority of which are Soviet.

II. INTERCRYSTALLINE CORROSION OF STAINLESS STEELS

Cherkis, Kh. I., Candidate of Technical Sciences, S.I. Vol'fson, and Yu. S. Medvedev, Engineer. Effect of Slow Heating on the Tendency of 1Kh18N9T Steel Toward Intercrystalline Corrosion 27

Khimushin, F.F., Candidate of Technical Sciences, and E.F. Istrina, Junior Scientific Worker. Study of the Tendency of the 0Kh18N9, 1Kh18N9, and 1Kh18N9T Types of Chromium-Nickel Steels Toward Intercrystalline Corrosion 45

Medovar, B.I., V.A. Langer, and M.M. Kurtepov, Candidates of Technical Sciences. Intercrystalline Corrosion Concentrated Along the Fusion Line of Welded Joints of the 18-8 Type Stabilized Steels ("Knife"-Type Corrosion) 59

Levitin, V.V., and L.V. Mironov. Effect of the Electric Heating of the 1Kh18N9T Steel on the Processes Determining Its Resistance to Intercrystalline Corrosion 71

Davidovskaya, Ye. A., Candidate of Technical Sciences, L.P. Kestel', Engineer, and Ye. I. Vyrupina, Candidate of Technical Sciences. Effect of the Heat Treatment of Some Stainless Steels on Their Tendency Toward Intercrystalline Corrosion 79

Talov, E.P., Engineer. Intercrystalline Sea-Water Corrosion of Austenitic High-Strength Steels 92

Shvarts, G.L., Candidate of Technical Sciences, and Yu. S. Kuznetsova, Engineer. Intercrystalline Corrosion and Corrosion Cracking of Stainless High-Alloy Austenitic Steels 110

Kotova, Ye. V., Engineer. Tendency of Chromium-Nickel-Molybdenum-Copper Steels Toward Intercrystalline Corrosion 126

Babakov, A.A., Candidate of Technical Sciences. Development of Two-Phase Steels-An Effective Means of Increasing Stainless Steel Resistance to Intercrystalline Corrosion 145

Levin, I.A., Candidate of Technical Sciences. More on the Problem of the Causes of Stainless Steel Intercrystalline Corrosion 148

Vedeneyeva, M.A., Engineer, and N.D. Tomashov, Doctor of Chemical Sciences, Professor. Determining Intercrystalline Corrosion of Chromium-Nickel Austenitic Steels by Measuring the Internal Friction 152

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KESTEL'MAN, N., kandidat tekhnicheskikh nauk; KOTLYAR, L., kandidat tekhnicheskikh nauk.

Experimental studies on milling corn meal. Muk.-elev.prom. 21 no.11: 13-15 N '55. (MIRA 9:4)

1.Odesskiy tekhnologicheskiy institut imeni I.V.Stalina.
(Corn milling)

SIMONOVICH, M.Ya.; KESTEL'MAN, N.Ya.

Effect of the surface roughness of roller flutes during the 1st and 2nd breaking stages on indices of the grinding process. Izv. v.ys. ucheb. zav.; pishch. tekh. no. 2:78-84 '58. (MIRA 11:10)

1. Odesskiy tekhnologicheskiy institut imeni I.V.Stalina, Kafedra tekhnologii metallov.

(Flour mills)

TSORFAS, S., inzh.; KOTLYAR, L., kand.tekhn.nauk; KRSTEL'MAN, M., kand.tekhn. nauk

For more extensive introduction of the preventive maintenance of machinery and equipment. Muk-elev.prom. 25 no.1:14-17 Ja '59. (MIRA 12:3)

1. Odesskiy tekhnologicheskiy institut imeni I.V. Stalina.
(Grain-milling machinery--Maintenance and repair)

S/191/60/000/004/014/015
B016/B058

AUTHORS: Kestel'man, N. Ya., Ferdman, I. A.

TITLE: Influence of the Normalizing Method on the Wear of Outer Layers of Caprone Specimens Due to Liquid Sliding Friction

PERIODICAL: Plasticheskiye massy, 1960, No. 4, pp. 69-70

TEXT: The authors report on their studies of wear due to liquid sliding friction on steplike shaped caprone specimens. They prepared three sets of samples which served for testing layers at different depths with regard to their wear resistance. The samples were normalized at 100°C in water and at 160 to 170°C in oil of the type "Машинное Т" ("Engine Oil T") for 60 min. The wear tests were made on the "Škoda - Savina" device. The places of friction were amply lubricated with oil of the type "Моторное Т" ("Motor Oil T") and brought into contact with a rotating hard-metal disc. The authors conclude therefrom that: 1) the wear of samples normalized in water increases the more, the closer the layer is to the surface; 2) the contrary is the case with samples normalized in oil. It is shown that the wear resistance of the upper layers of samples

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normalized in water is much lower than that of samples normalized in oil. The hardness of samples normalized in oil is 1.3 to 1.7 times higher than that of samples normalized in water. Accordingly, the wear resistance of the former is also greater. Summing up: If workpieces with constant dimensions are to be manufactured in press molds, they are to be normalized in oil. There are 4 figures and 4 Soviet references.

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87882
S/191/60/000/005/012/020
B004/B064

15.8340

AUTHOR: Kestel'man, N. Ya.

TITLE: Centrifugal Casting of Parts From Polyamides

PERIODICAL: Plasticheskiye massy, 1960, No. 5, pp. 41-42

TEXT: This is a description of the centrifugal casting of caprone bushings, for friction bearings as a substitute for the expensive bearing metal. It is emphasized that dimensions of the bushings must be adapted to the properties of the plastic. Copying of metal bearings is inexpedient. Bushings should be thin-walled. They are reinforced by cast-iron bushings. Caprone was dried for 30 hours at 80°C until it contained no more than 0.3% water. Then, it was filled into a cylindrical mold, molten for 15-20 minutes at 250°C, the mold clamped in the three-jaw chuck of a lathe, and the caprone caused to solidify at 800-1500 rpm. Results are given for some plastics: polycaprolactam, melting point 215°C, casting temperature 230-240°C, Brinell hardness of the finished product 10-12 kg/mm^2; polyamide resin 68, melting point 210-215°C, casting temperature 250-260°C, Brinell hardness 14-15 kg/mm^2; polyamide resin AK-7 (AK-7), melting point

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S/191/60/000/005/012/020
B004/B064

Centrifugal Casting of Parts From Polyamides

240-243°C, casting temperature 250-265°C, Brinell hardness 15-18 kg/mm^2; polyamide resin 54, melting point 150-160°C, casting temperature 170-180°C, Brinell hardness 4-4.5 kg/mm^2. The empirical formula $n = 2000/\sqrt{R - \delta}$ (n = number of revolutions, R = external diameter of the bushing, δ = wall thickness in cm) is given to calculate the necessary speed. The procedure is applied by the Dnepropetrovskiy zavod srednikh gidravlicheskikh i tyazhelykh mekhanicheskikh pressov (Dnepropetrovsk Works for Medium Hydraulic and Heavy Mechanical Presses) and Zaporozhskiy zavod "Kommunar" (Zaporozh'ye "Kommunar" Works). Tests showed that the bearing capacity of caprone is not inferior to that of various bearing bronzes when oil lubrication is applied. Moreover, different lubricants including water can be used for caprone. For oil lubrication, a gliding velocity $v = 3$ m/sec and a pressure $P = 100$ kg/cm^2, i.e., $Pv = 300$, were found to be optimum. There are 2 figures and 1 table.

Card 2/2

KESTEL'MAN, N.Ya., kand.tekhn.nauk, dotsent

Surface roughness caused by cutting secondary capron. Izv.vys. uchab.zav.; mashinostr. no.1:185-191 '61. (MIRA 14:4)

1. Odesskiy tekhnologicheskiy institut.
(Nylon)

S/191/61/000/004/005/009
B110/B208

24 2300 1160, 1138

AUTHORS: Kestel'man, N. Ya., Kestel'man, V. N.

TITLE: Apparatus for measuring the thickness of plastic coatings, considering the unevenness of the metallic surface

PERIODICAL: Plasticheskiye massy, no. 4, 1961, 48-50

TEXT: A device developed in the magnet laboratory of MGU (Moscow State University) with a permanent magnet, as well as an electric spark defectoscope of VNIIAvtogen were used to measure the thickness of plastic coatings. These apparatus are, however, not very well suited for production control. When applying polyamide coatings on ferrous metals, the coating quality increases with decreasing surface purity of the metal (from V8 to V1 according to GOST 2789-59 (GOST 2789-59)). The magnetoelectric device for thickness measurements (Fig. 1) consists of the immobile horseshoe magnet 1 and the mobile frame 2. To increase the magnetic effect, the clearance between the frame and the poles 3 from soft magnetic material is kept very small. Interaction of magnetic field and direct current in the frame causes deflection of the pointer 4. The direct current flows from the dry

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Apparatus for measuring the...

cell 7 of the КБС-Л-0.50 (KBS-L-0.50) type to the frame via spring 6. The initial adjustment is effected by potentiometer 8. The device has four scales of different sensitivity. The flat shoes 9 of the magnet are put on the specimen (10). 11 is the switch. At high surface purity (▽11-13) of the specimen, the clearance between it and the shoes is nearly equal to zero. It exerts a shunting effect on the magnetic system which, in turn, has only a weak induction effect on the frame. This minimum deflection of the pointer then indicates the zero point. With increasing thickness of a plastic coating between metal surface and shoes, the shunting effect of the specimen on the magnetic system decreases, while the induction effect on frame 2 and the angular deflection of pointer 2 increase. Fig. 2 shows the dependence of the pointer indication on the coating thickness (0.25-3.5 mm) at constant height of the unevenness of the metal surface ▽6. The measuring ranges of the scales are: Scale I: δ = 1-3.5 mm; scale II: δ = 0.5-2 mm; and scale III: δ = 0-0.75 mm. If shoes with a vertex angle of 45° are used, the thickness of coatings of any surfaces may be measured with scale IV (racks, gears, cylindrical shafts, rolls, etc.). To determine the dependence of indication on the unevenness of the metal surface, measurements were carried out at equal coating thick-

S/191/61/000/004/005/009
B110/B208

ness but different heights of unevenness (Fig. 4). The wanted scale is adjusted to zero according to the standard (∇8). First, the deflection n on contact with the non-coated surface is read, then the deflection n_1 after coating, and, finally, the thickness is determined from Fig. 2. As the apparatus indicates both the coating thickness and the height of unevenness, a correction factor K_R has to be introduced to determine the actual coating thickness δ_g. In order to obtain K_R, the degree of purity of the metal surface has to be measured by using Fig. 4 with known indication of n. K_R will then be read from the table. A polished steel surface corresponding to the 8th purity grade and having a mean arithmetic profile deviation $R_a = 0.63\mu$ was used as standard. The actual coating thickness is obtained from $\delta_g = \delta \cdot K_R$ mm, where δ_g = actual coating thickness; δ = thickness obtained from Fig. 2 according to instrument indication; K_R = corrective factor. In this way, the thickness of polycaprolactam, polyethylene, polyvinyl chloride, and polystyrene coatings was determined. There are 5 figures, 1 table, and 2 Soviet-bloc references.

KESTEL'MAN, N.Ya.; KOTLYAR, L.I.

Expediency of using capron in the trieur disk manufacture. Izv. vys. ucheb. zav.; pishch. tekh. no. 2:108-113 '61. (MIRA 14:5)

1. Odesskiy tekhnologicheskiy institut imeni I.V. Stalina. Kafedra tekhnologii metallo i Kafedra tekhnologicheskogo oborudovaniya.

(Grain-handling machinery)
(Nylon)

KESTEL'MAN, N.Ya.; KESTEL'MAN, V.N.

Instrument for determining the thickness of a plastic coat, making allowances for the roughness of the metallic surface. Plast.massy no.4:48-50 '61. (MIRA 14:4)
(Plastics—Testing) (Thickness measurement)

43772

S/653/61/000/000/028/051
I042/I242

AUTHOR: Kestel'man, N. Ya.

TITLE: Investigation of the abrasion endurance of caprone

SOURCE: Plastmassy v mashinostroyenii i priborostroyenii. Pervaya resp. nauch.-tekh. konfer. po vopr. prim. plastmass v machinostr. i priborostr., Kiev, 1959. Kiev, Gostekhizdat, 1961, 325-334

TEXT: The wear endurance of caprone, bronze, and cast iron was tested by five methods which are described. They include two frictional tests against abrasive materials, a low-velocity frictional test, an improved test for hardness, and a test for lubricated surfaces. The wear resistance of caprone was found superior to that of the other materials due to the formation of a compact surface layer. The addition of 2-2.5% silver graphite increased considerably the

Card 1/2

S/653/61/000/000/028/051
I042/I242

Investigation of the abrasion endurance...

wear resistance of caprone. The effect of environment on the hardness of caprone is discussed. Normalization of caprone in oil increased its hardness by 13-20% while normalization in water caused a 7-13% decrease. Thrice fused caprone has low wear resistance despite its high hardness. There are 8 figures and 4 tables.

Card 2/2

KESTEL'MAN, N.Ya.

Economic efficiency of using plastics in refrigerating machinery. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. 16 no.4:24-26 '63. (MIRA 16:8)
(Refrigeration and refrigerating machinery) (Plastics)

KESTEL'MAN, N.Ya.; KESTEL'MAN, V.N.

Apparatus for determining the hardness of plastic thin-layer coatings and bushings. Zav. lab. 29 no.10:1252-1253 '63. (MIRA 16:12)

1. Odesskiy tekhnologicheskiy institut imeni Lomonosova.

GENEL', S.V., kand. tekhn. nauk; KESTEL'MAN, N.Ya., kand. tekhn. nauk; KESTEL'MAN, V.N., inzh.; KOGAN, A.M., inzh., retsenzent; BLAGOSKLONOVA, N.Yu., inzh., red.

[Polymeric materials in food machinery manufacture] Polimernye materialy v pishchevom mashinostroenii. Moskva, Izd-vo "Mashinostroenie," 1964. 382 p. (MIRA 17:6)

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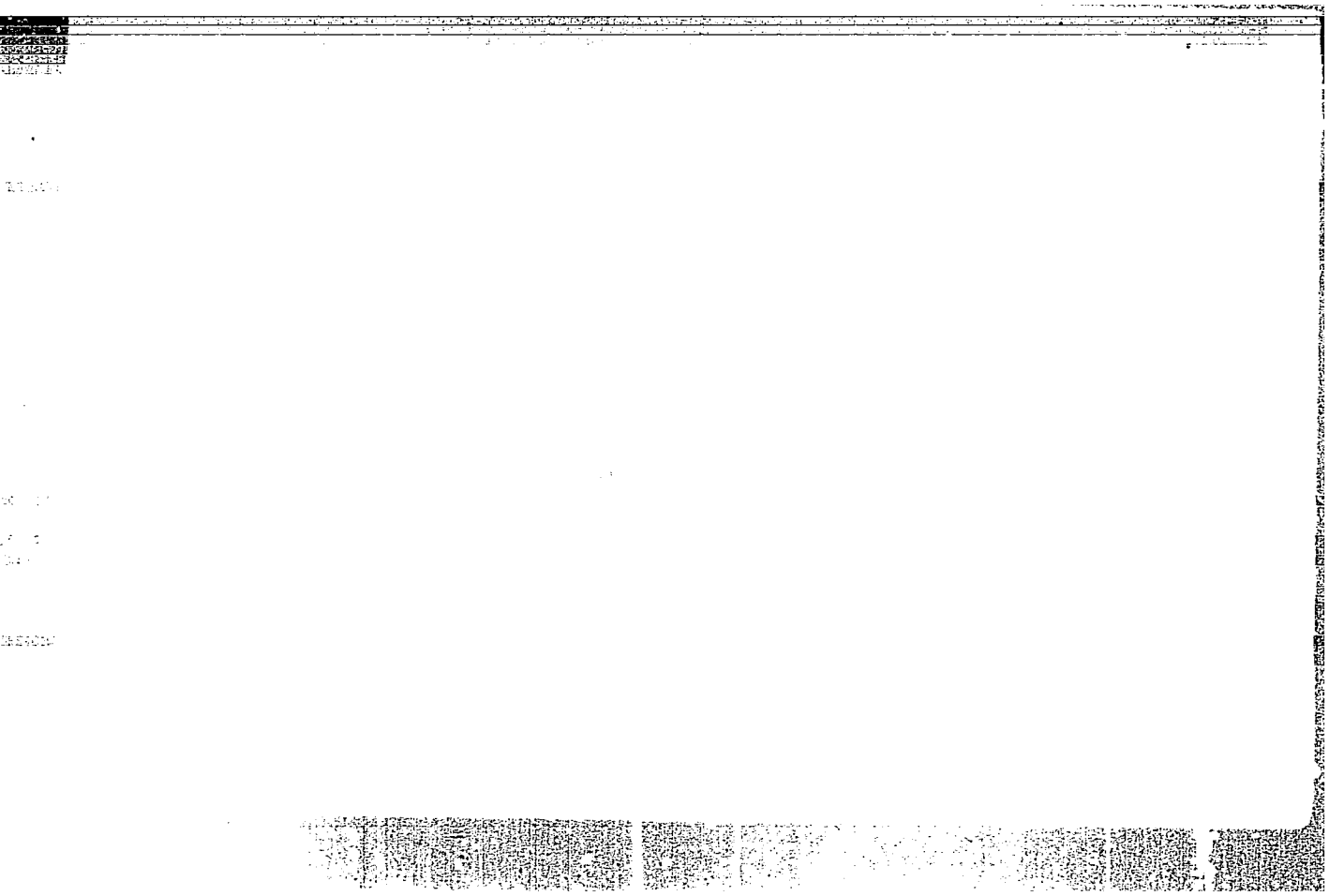

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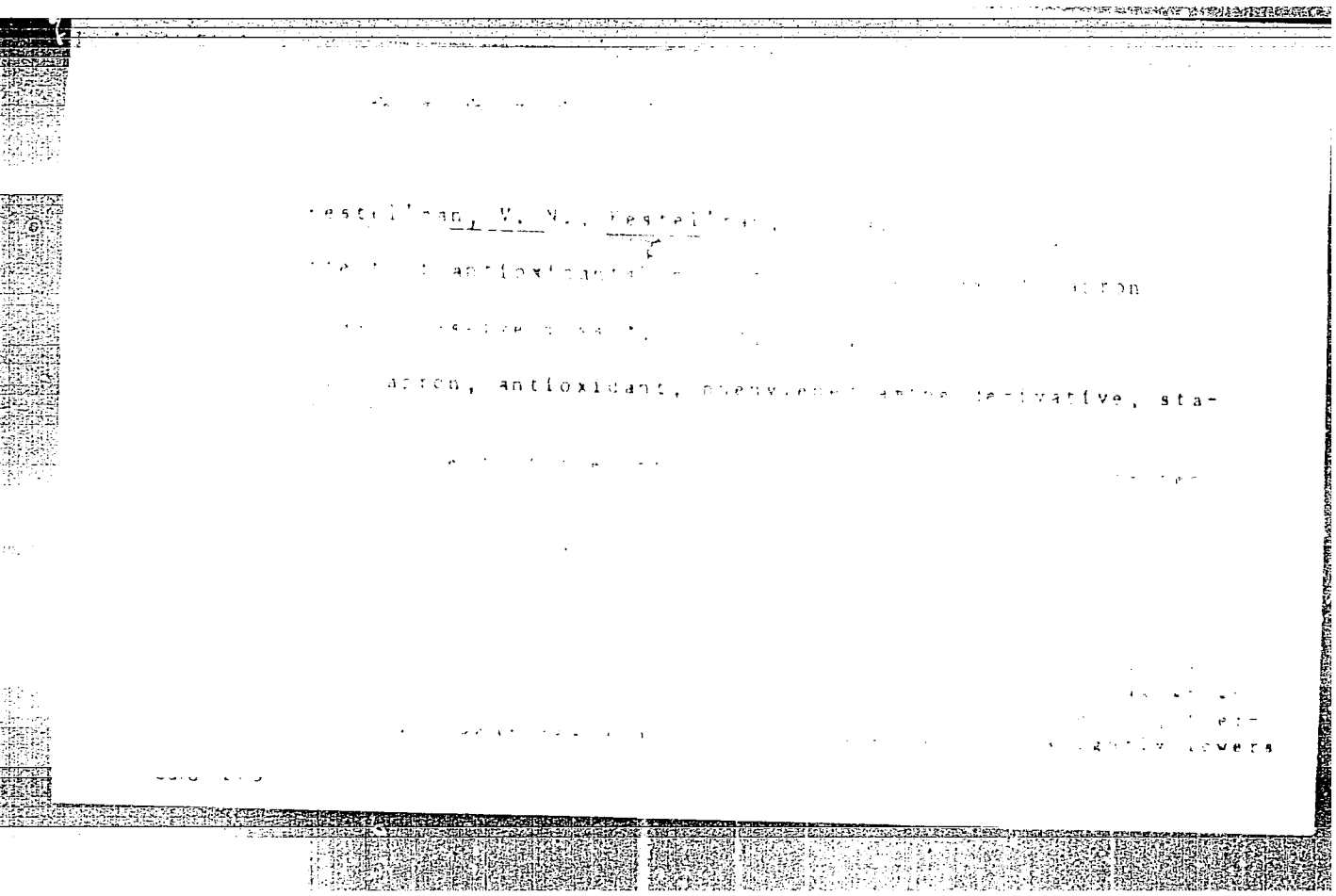
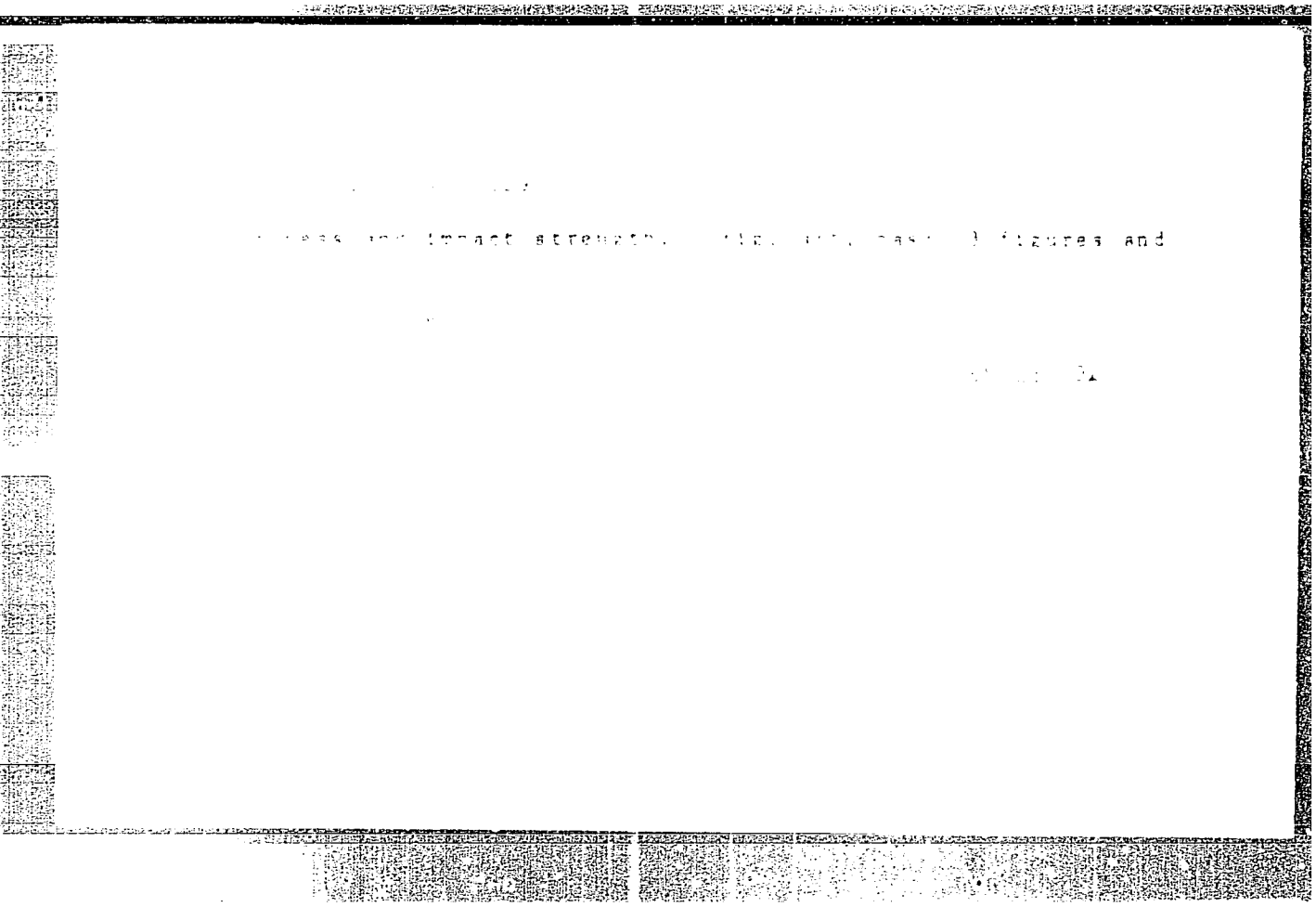
KESTEL'MAN, N. Ya.; KESTEL'MAN, V. N.

Utilization of plastic coated metals in the manufacture of food machinery. Izv.vys.ucheb.zav.; pishch.tekh.no. 2:80-83 '64. (MIRA 17:5)

1. Odesskiy tekhnologicheskiy institut imeni Lomonosova i Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti.





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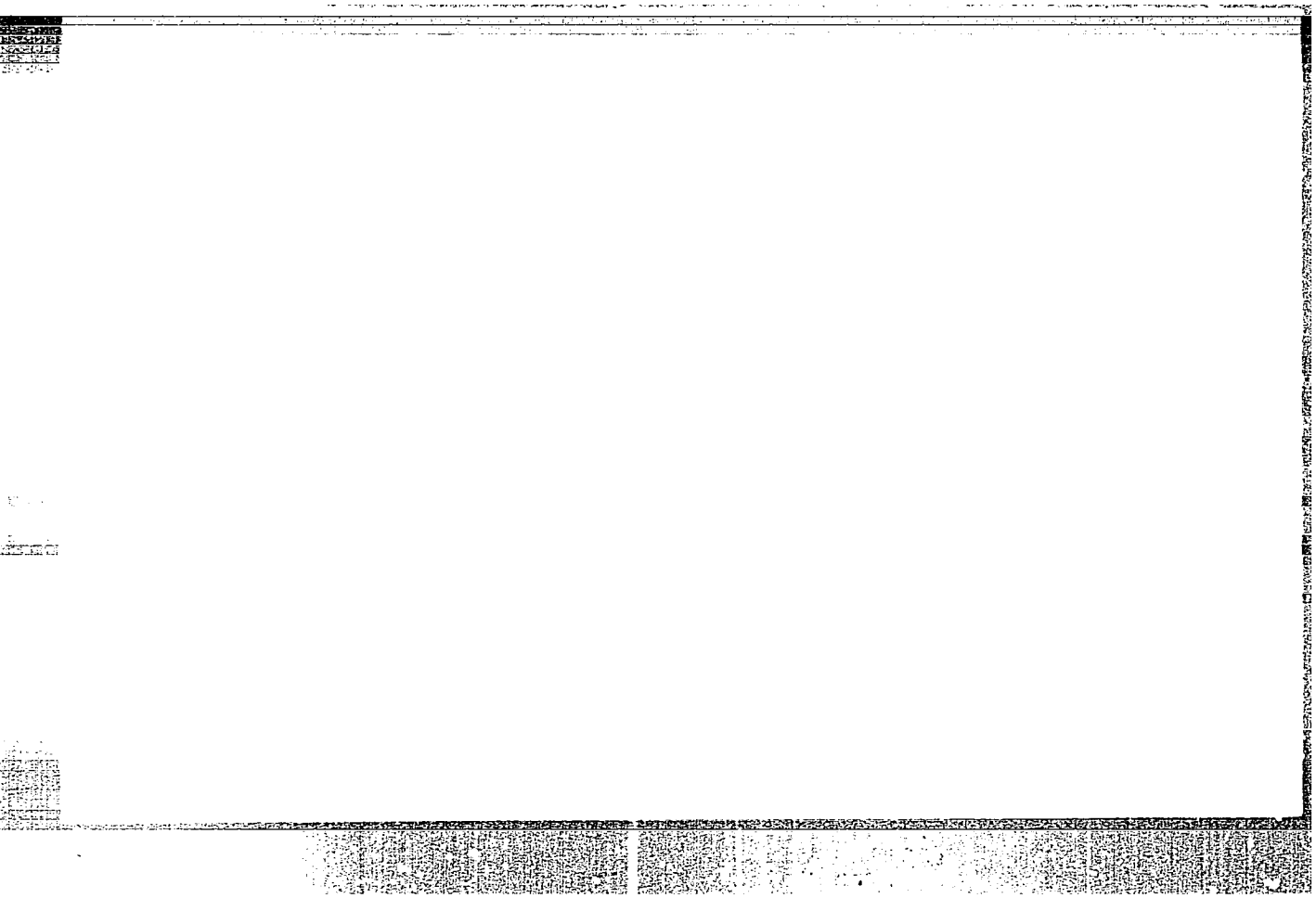

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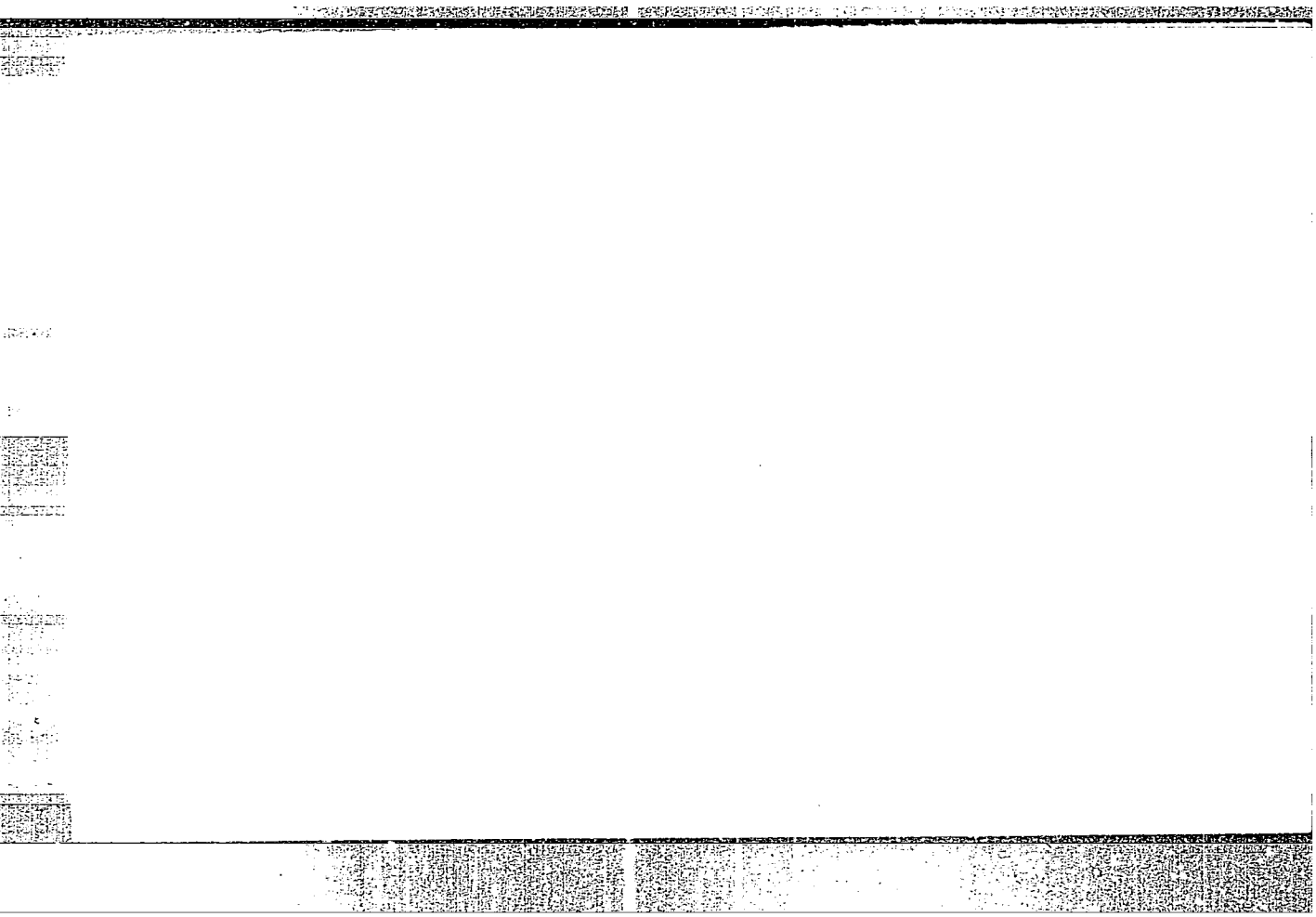

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KESTEL'MAN, N.Ya., kand. tekhn. nauk, dotsent; CHMYR', A.D., kand. tekhn. nauk; KESTEL'MAN, V.N., inzh.

Effect of ionizing radiations on the wear resistance of polyamides. Izv.vys.ucheb.zav.;mashinostr. no.5:168-172 '64.

(MIRA 18:1)

1. Odesskiy tekhnologicheskiy institut imeni M.V.Lomonosova.

[illegible], G.M., kand. tekhn. nauk; [illegible], aspirant

Effect of cutting conditions in machining on latex on the surface smoothness of plastic parts. Izv. vys. uchob. zav.; mashinostr. no.9:166-169 '64.

(MIRA 17:12)

1. Odesskiy tekhnologicheskiy institut (for K.Ya. Kostel'man).
2. Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti (for V.E. Kostel'man).

KESTEL'MAN, V.N.; RUTTO, R.A.; KESTEL'MAN, N. Ya.; SHAPOVALOV, Yu.I.; MIRONOVICH, L.L.

Selecting parameters and methods for applying caprone coatings on metal surfaces. Mashinostroitel' no.11:33-34 N '64 (MIRA 18:2)

MIRSOV, V.A.; [illegible], N.Ya.

[illegible] on the problems of the use of plastics in machinery manufacture. Plast.massy no.6:72-73 '65.

(MIRA 18:8)

VOLKOV, V.A., [illegible]; KESTEL'MAN, N.Ya., kand. tekhn. nauk, dotsent

Conference-seminar on the introduction of plastics into the machinery industry. Vest. mashinostr. 45 no.6:85 Je '65.
(MIRA 18:6)

L 01009-66 EWT(m)/EPF(c)/EWP(l)/EWP(v)/EWP(j)/T/EWP(t)/EWP(b) JD/WW/RM

ACCESSION NR: AP5019570 UR/0191/65/000/008/0059/0061
678.675'125.026.3.01:536.53:539.612

AUTHOR: Kestel'man, V. N.; Rutto, R. A.; Kestel'man, N. Ya.; Shapovalov, Yu. I.; Mironovich, L. L.

TITLE: Durability and adhesion of nylon coatings as a function of the methods of their deposition on metal surfaces

SOURCE: Plasticheskiye massy, no. 8, 1965, 59-61

TOPIC TAGS: adhesive bonding, nylon, steel, cast iron, plastic coating

ABSTRACT: The properties of polyamide coatings, obtained by closely related methods are compared. The optimum temperature of the metal during the deposition of the nylon film was found to be 225-250°C (see fig. 1 of the Enclosure). Deviation from this temperature sharply decreases the adhesion of the coating and its physical and mechanical properties. Sand blasting of the surface of the metal increases the strength of coupling between the coating and the metal. The best adhesion of nylon to steel is achieved when the particle size of nylon is in the 200-270 μ range (see fig. 2 of the Enclosure). Below 200 μ nylon is oxidized at elevated temperatures

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L 01009-66

ACCESSION NR: AP5019570

3

and above 270 μ it is poorly melted. Powders were produced by dissolution of nylon in caprolactam monomer, precipitation, extraction of solvent and drying. It was found that coatings obtained by different methods differ significantly in their durability. The most stable nylon coatings were obtained by the vibration method. "The authors express their gratitude to S. B. Ratner for his valuable advice." Orig. art. has: 4 figures.

44, 55

ASSOCIATION: none

SUBMITTED: 00	ENCL: 02	SUB CODE: MT
NO REF SOV: 006	OTHER: 002	

Card 2/4

L 01009-66

ACCESSION NR: AP5019570

ENCLOSURE: 01

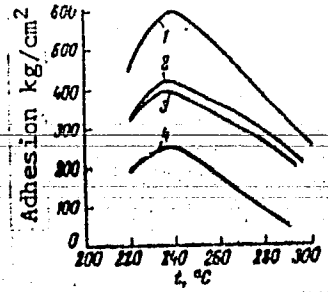

Fig. 1. Adhesion of nylon coatings to steel (1,3) and cast iron (2,4) parts as a function of surface temperature.

Card 3/4

L 01009-66

ACCESSION NR: AP5019570

ENCLOSURE: 02

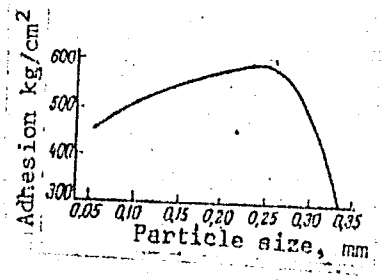

Fig. 2. Adhesion of nylon to steel as a function of the particle size of the nylon powder (the surface of the metal specimens was cleaned by sand blasting).

Card 4/4

IVASHKEVICH, V.P., inzh.; KESTEL'MAN, V.I., inzh.

Use of plastics in equipment. Mashinostroenie no.4:39-41 Jl-Ag '62. (MIRA 15:9)

1. Zaporozhskiy sovet narodnogo khozyaystva.
(Plastics)

24.2300 1160, 1138

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B110/B208

AUTHORS: Kestel'man, N. Ya., Kestel'man, V. N.

TITLE: Apparatus for measuring the thickness of plastic coatings, considering the unevenness of the metallic surface

PERIODICAL: Plasticheskiye massy, no. 4, 1961, 48-50

TEXT: A device developed in the magnet laboratory of MGU (Moscow State University) with a permanent magnet, as well as an electric spark defectoscope of VNIIAvtogen were used to measure the thickness of plastic coatings. These apparatus are, however, not very well suited for production control. When applying polyamide coatings on ferrous metals, the coating quality increases with decreasing surface purity of the metal (from 78 to 71 according to GOST 2789-59 (GOST 2789-59)). The magnetoelectric device for thickness measurements (Fig. 1) consists of the immobile horseshoe magnet 1 and the mobile frame 2. To increase the magnetic effect, the clearance between the frame and the poles 3 from soft magnetic material is kept very small. Interaction of magnetic field and direct current in the frame causes deflection of the pointer 4. The direct current flows from the dry

Apparatus for measuring the...

cell 7 of the KBC-1-0.50 (KBS-L-0.50) type to the frame via spring 6. The initial adjustment is effected by potentiometer 8. The device has four scales of different sensitivity. The flat shoes 9 of the magnet are put on the specimen (10). 11 is the switch. At high surface purity (▽11-13) of the specimen, the clearance between it and the shoes is nearly equal to zero. It exerts a shunting effect on the magnetic system which, in turn, has only a weak induction effect on the frame. This minimum deflection of the pointer then indicates the zero point. With increasing thickness of a plastic coating between metal surface and shoes, the shunting effect of the specimen on the magnetic system decreases, while the induction effect on frame 2 and the angular deflection of pointer 2 increase. Fig. 2 shows the dependence of the pointer indication on the coating thickness (0.25-3.5 mm) at constant height of the unevenness of the metal surface ▽8. The measuring ranges of the scales are: Scale I: δ = 1-3.5 mm; scale II: δ = 0.5-2 mm; and scale III: δ = 0-0.75 mm. If shoes with a vertex angle of 45° are used, the thickness of coatings of any surfaces may be measured with scale IV (racks, gears, cylindrical shafts, rolls, etc.). To determine the dependence of indication on the unevenness of the metal surface, measurements were carried out at equal coating thick-

ness but different heights of unevenness (Fig. 4). The wanted scale is adjusted to zero according to the standard ($\nabla 8$). First, the deflection n on contact with the non-coated surface is read, then the deflection n_1 after coating, and, finally, the thickness is determined from Fig. 2. As the apparatus indicates both the coating thickness and the height of unevenness, a correction factor K_R has to be introduced to determine the actual coating thickness δ_g. In order to obtain K_R, the degree of purity of the metal surface has to be measured by using Fig. 4 with known indication of n. K_R will then be read from the table. A polished steel surface corresponding to the 8th purity grade and having a mean arithmetic profile deviation $R_a = 0.63\mu$ was used as standard. The actual coating thickness is obtained from $\delta_g = \delta . K_R$ mm, where δ_g = actual coating thickness; δ = thickness obtained from Fig. 2 according to instrument indication; K_R = corrective factor. In this way, the thickness of polycaprolactam, polyethylene, polyvinyl chloride, and polystyrene coatings was determined. There are 5 figures, 1 table, and 2 Soviet-bloc references.

Card 3/6

KESTEL'MAN, N.Ya.; KESTEL'MAN, V.N.

Instrument for determining the thickness of a plastic coat, making allowances for the roughness of the metallic surface. Plast.massy no.4:48-50 '61. (MIRA 14:4)
(Plastics—Testing) (Thickness measurement)

KESTEL'MAN, V.N.

Use of capron in industry. Mashinostroitel' no.1:46 Ja '62.
(Nylon) (MIRA 15:1)

KESTEL'MAN, V.N., inzh.; IVASHKEVICH, V.P., inzh.

Manufacturing capron bushings. Mashinostroenie no.6:29-31 N-D '62. (MIRA 16:2)

1. Zaporozhskiy avtozavod "Kommunar".
(Nylon)

IVASHKEVICH, V.P.; KESTEL'MAN, V.N.

Plastic equipment. Mashinostroitel' no.5:17-18 My '62.
(Plastics) (MIRA 15:5)

IVASHKEVICH, V.P.; KESTEL'MAN, V.N.

Use of plastics in the electric equipment industry. Energ. i elektrotekh. prom. no.3:76 Jl-S '63. (MIRA 16:10)

1. Pridneprovskiy sovet narodnogo khozyaystva.

L 16821-63 EPR/EWP(1)/EPF/[illegible] WW/DJ

Yesel'man, V. N.; Vashkevich, V. F.

TITLE: New polymeric material for machine building

SOURCE: Byulleten' tekhniko-ekonomicheskoy informatsii, no. 6, 1963, 20-21

TOPIC TAGS: polyformaldehyde, polymeric material, machine part, heat resistance, wear resistance

ABSTRACT: The Kuskovskiy Chemical Plant has developed a new polymeric material known as polyformaldehyde (PFA). PFA is more wear resistant than the various polyamides that have been widely used in the machine building industry because of their wear resistance. PFA has a denser crystal lattice than polyethylene which increases its physical-mechanical properties. PFA preserves its mechanical properties under high fluctuating temperatures up to 393°K. It is produced in the form of yellow granules which are processed by die casting, pressing, or extrusion. Machine parts made of PFA should be heat treated by soaking in boiling water or oil at 427°K for 1-3 min for each 1 mm of part thickness. Wear resistance of PFA has proven superior to

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L 16821-63
ACCESSION NR: AP3004210

to capron and ceramet in automobile machine parts. PFA is used for ball bearings, gears, and other machine parts because of its good mechanical properties, heat resistance, and low water absorbency. At present the Kommunar Automobile Plant and the Kuskovskiy Chemical Plant are developing new uses for PFA. Orig. art. has: no figures, tables, or formulas.
ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 02Aug63 ENCL: 00

SUB CODE: CH, MA NO REF SOV: 000 OTHER: 000

Card 2/2

KESTEL'MAN, V.N.; IVASHKEVICH, V.P.

"Stavinil," a new promising combined material. Plast. massy no.11:60-61 '63. (MIRA 16:12)

KESTEL'MAN, V.N.; IVASHKEVICH, V.P.

New polymer material used in the manufacture of machinery. Biul. tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. 16 no.6:20-21 '63. (MIRA 16:8)

(Polymers)

KESTEL'MAN, N.Ya.; KESTEL'MAN, V.N.

Apparatus for determining the hardness of plastic thin-layer coatings and bushings. Zav. lab. 29 no.10:1252-1253 '63. (MIRA 16:12)

1. Odesskiy tekhnologicheskiy institut imeni Lomonosova.

FEL'DMAN, D.I., inzh.; KESTEL'MAN, V.N., inzh.

Determining dimensions of capron bushings. Mashinostroenie no.4: 90-91 Jl-Ag '63. (MIRA 17:2)

1. Zaporozhskiy avtozavod "Kommunar".

KESTEL'MAN, V.N.

Wear resistance of "penton" plastics. Plast.massy no.12:60-61 '63.
(MIRA 17:2)

GENEL', S.V., kand. tekhn. nauk; KESTEL'MAN, N.Ya., kand. tekhn. nauk; KESTEL'MAN, V.N., inzh.; KOGAN, A.M., inzh., retsenzent; BLAGOSKLONOVA, N.Yu., inzh., red.

[Polymeric materials in food machinery manufacture] Polimernye materialy v pishchevom mashinostroenii. Moskva, Izd-vo "Mashinostroenie," 1964. 382 p. (MIRA 17:6)

BENDERSKIY, S.N., kand.tekhn. nauk; BURSIAN, V.R., prof., kand. tekhn. nauk; VASIL'YEV, P.N., inzh.; DORFMAN, E.Ye., inzh.; ZHURAVLEV, V.F., kand. tekhn. nauk; KESTEL'MAN, V.N., inzh.; KRUGLOV, A.N., dots., kand. tekhn. nauk; KUKIENYY, A.A., dots., kand.tekhn. nauk; LEVACHEV, N.A., dots., kand. tekhn. nauk; LEYKIN, A.Ya., inzh.; NAREMSKIY, N.K., dots., kand. tekhn. nauk; PLATONOV, P.N., prof., doktor tekhn. nauk; SOKOLOV, A.Ya., prof., doktor tekhn. nauk; KUTSENKO, K.I., kand. tekhn. nauk, dots., retsenzent; VEREMEYENKO, Ye.I., inzh., retsenzent; KOVTUN, A.P., inzh., retsenzent; SEMENYUK, A.I., retsenzent; KASHCHEYEV, I.P., inzh., retsenzent; PAL'TSEV, V.S., kand. tekhn. nauk, retsenzent; KHMEL'NITSKAYA, A.Z., red.

[Conveying and reloading machinery for the overall mechanization of the food industries] Transportiruiushchie i peregruzochnye mashiny dlia kompleksnoi mekhanizatsii pishchevykh proizvodstv. Moskva, Pishchevaia promyshlennost', 1964. 759 p. (MIRA 18:3)

(Continued on next card)

BENDERSKIY, S.N.—— (continued). Card 2.

1. Odesskiy tekhnologicheskiy institut imeni M.V.Lomonosova (for Kutsenko, Naremskiy, Veremeyenko, Kovtun). 2. Starshiy ekspert Upravleniya po avtomatizatsii i oborudovaniyu dlya pishchevoy promyshlennosti Gosudarstvennogo komiteta po mashinostroyeniyu pri Gosplane SSSR (for Semenyuk). 3. Glavnyy mekhanik Gosudarstvennogo instituta po proyektirovaniyu predpriyatiy mukomol'nokrupyanoy i kombikormovoy promyshlennosti i elevatorno-skladskogo khozyaystva (for Kashcheyev). 4. Zaveduyushchiy laboratoriyey Vsesoyuznogo nauchno-issledovatel'skogo instituta zerna i produktov ego pererabotki (for Pal'tsev).

KESTEL'MAN, V.N., inzh.; IVASHKEVICH, V.P., inzh.

Autoclave with induction heating for making parts from capron.
Mashinostroenie no. 2:30-32 Mr-Ap '64. (MIRA 17:5)

KESTEL'MAN, V. N.

Research in the field of the utilization of capron in the manufacture of food machinery. Izv.vys.ucheb.zav.; pishch.tekh.no.2: 75-79 '64. (MIRA 17:5)

1. Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti, kafedra pishchevykh mashin.

KESTEL'MAN, N. Ya.; KESTEL'MAN, V. N.

Utilization of plastic coated metals in the manufacture of food machinery. Izv.vys.ucheb.zav.; pishch.tekh.no. 2:80-83 '64. (MIRA 17:5)

1. Odesskiy tekhnologicheskiy institut imeni Lomonosova i Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti.

IVASHKEVICH, V.P., inzh.; KESTEL'MAN, V.N., inzh.

New polymer material for the machinery industry. Mashinostroenie no.1:17-18 Ja-F '64. (MIRA 17:7)

KESTEL'MAN, N.Ya., kand. tekhn. nauk, dotsent; CHEMIR', A.D., kand. tekhn. nauk; KESTEL'MAN, V.N., inzh.

Effect of ionizing radiations on the wear resistance of polyamides. Izv.vys.ucheb.zav.;mashinostr. no.5:168-172 '64. (MIRA 18:1)

1. Odesskiy tekhnologicheskiy institut imeni M.V.Lomonosova.

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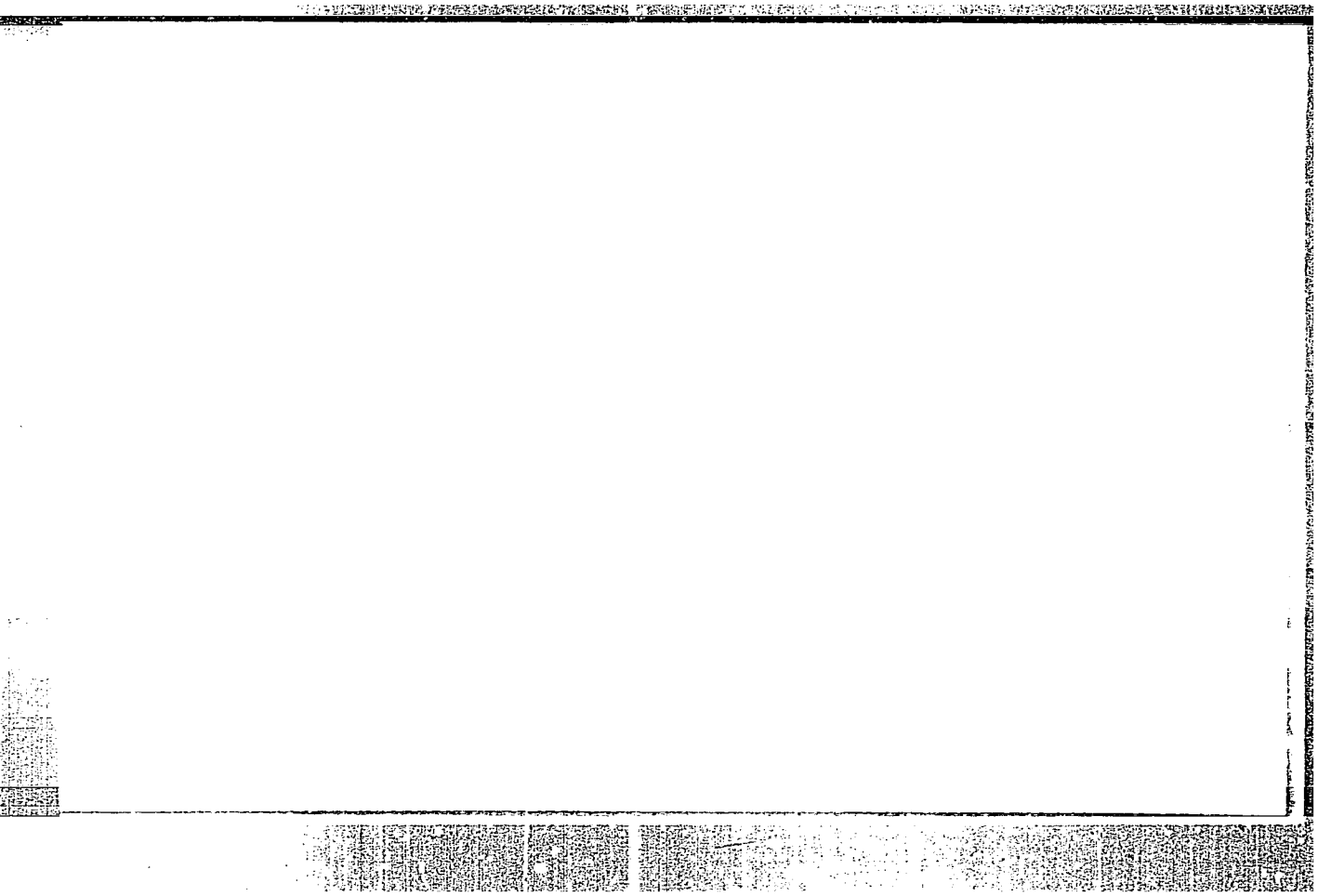

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Card 3/3

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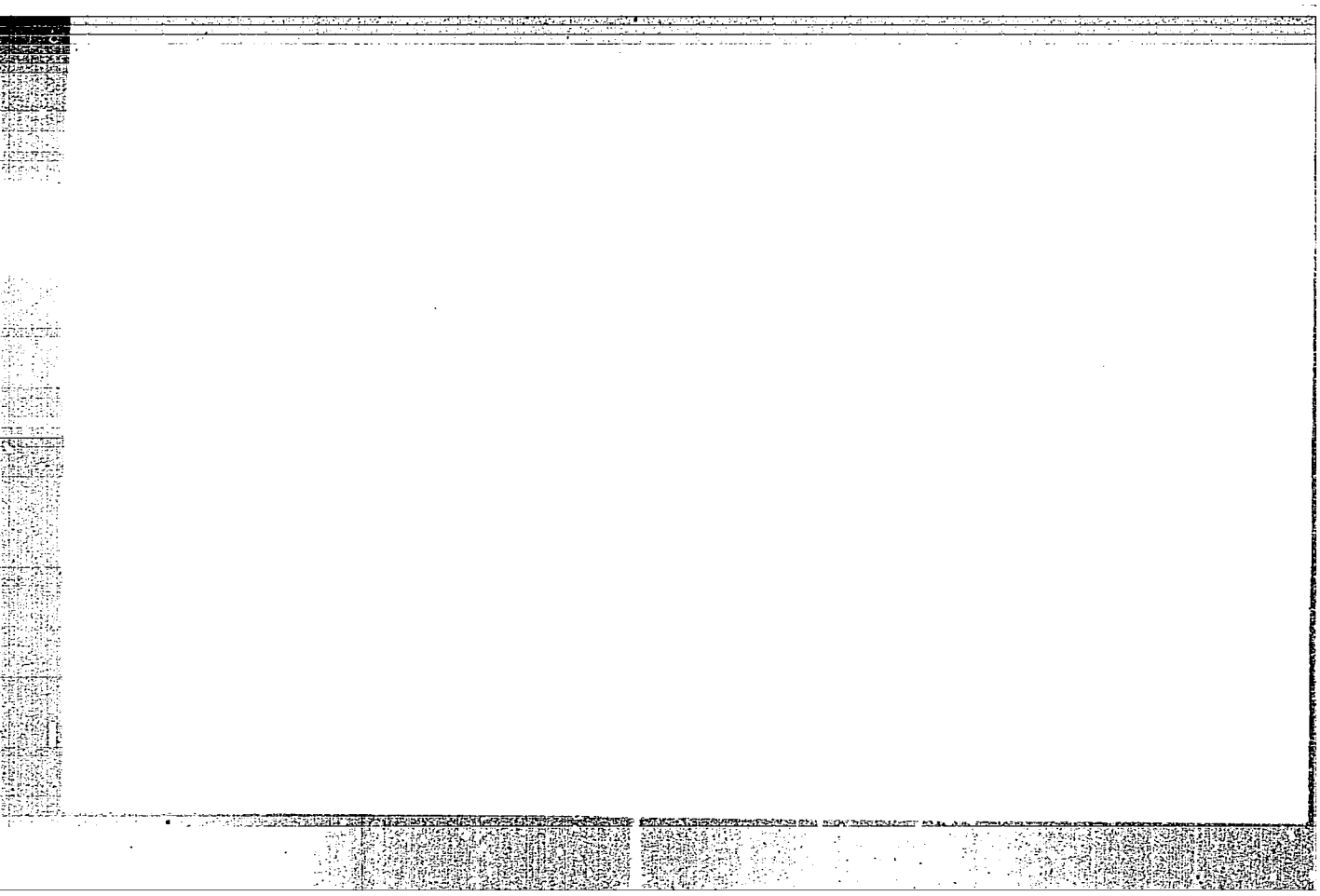

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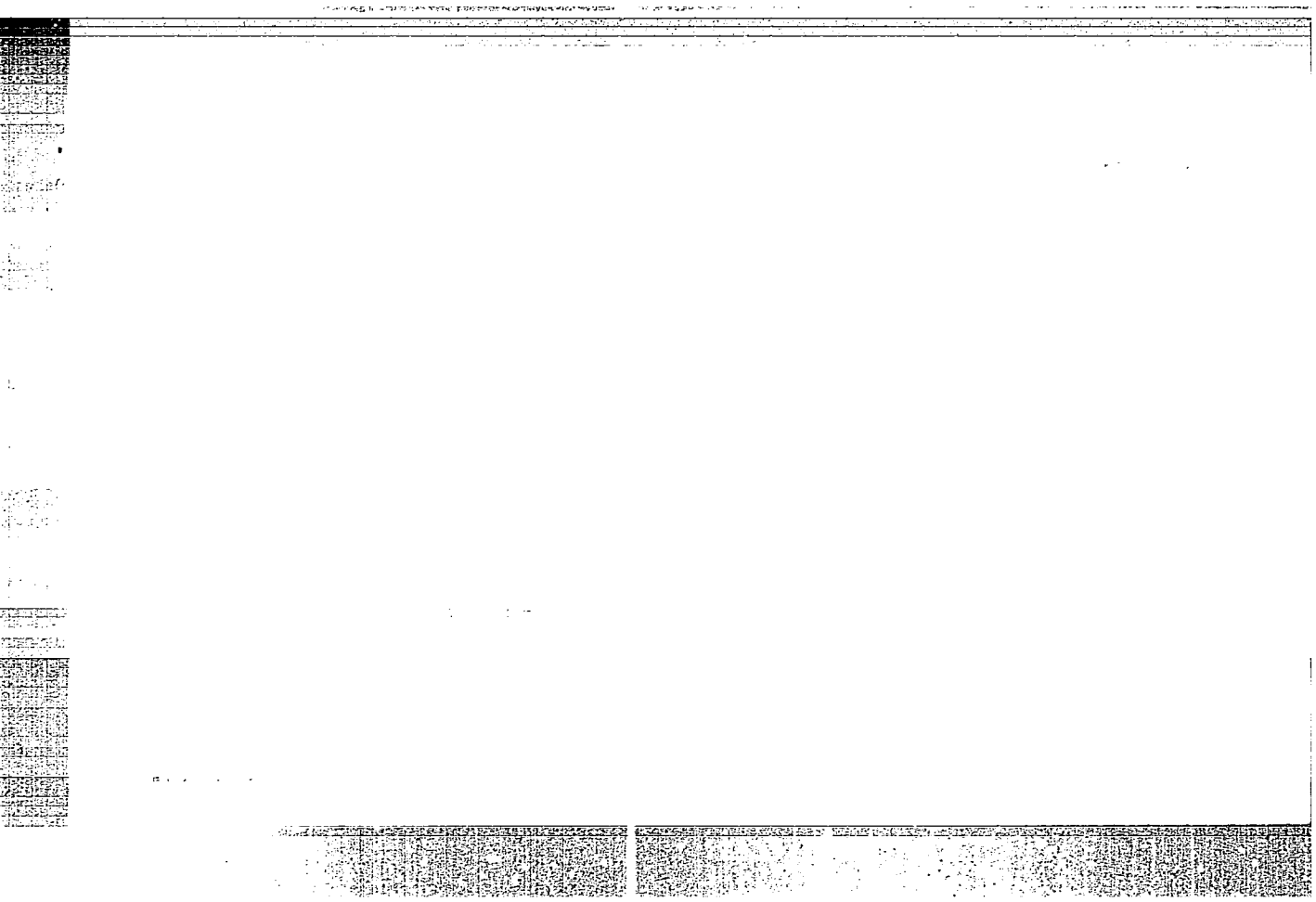

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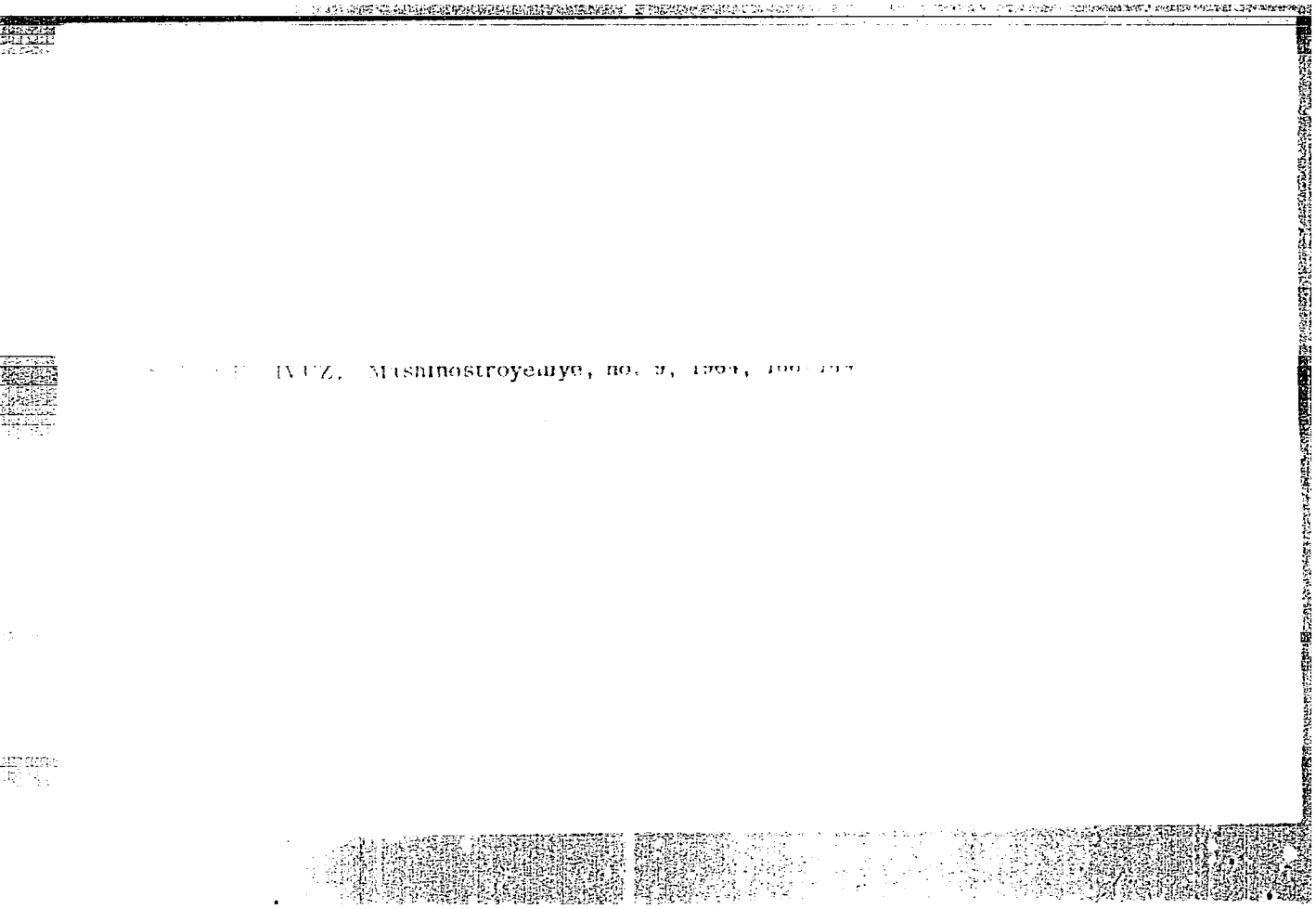

ASSOCIATION: Odesskiy tekhnologicheskiy institut (Odessa Technology Institute)

KESTEL'MAN, V.N.; RUTTO, R.A.; KESTEL'MAN, N. Ya.; SHAPOVALOV, Yu.I.; MIRONOVICH, L.L.

Selecting parameters and methods for applying caprone coatings on metal surfaces. Mashinostroitel' no.11:33-34 N '64 (MIRA 18:2)

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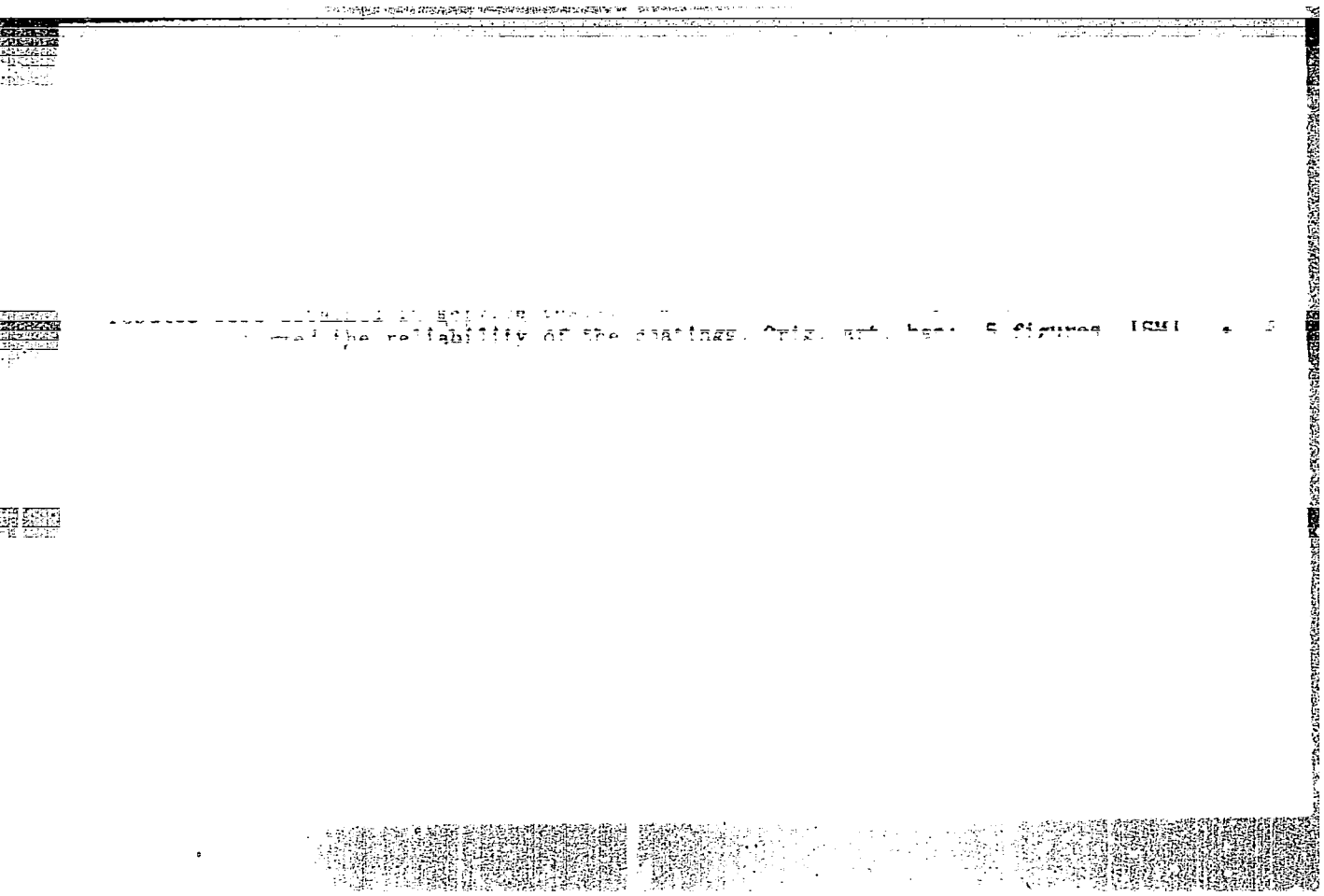

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AUTHOR: Kestel'man, V. N.; Rutto, R. A.; Kestel'man, N. Ya.; Shapovalov, Yu. I.; Mironovich, L. L.

TITLE: Durability and adhesion of nylon coatings as a function of the methods of their deposition on metal surfaces

SOURCE: Plasticheskiye massy, no. 8, 1965, 59-61

TOPIC TAGS: adhesive bonding, nylon, steel, cast iron, plastic coating

ABSTRACT: The properties of polyamide coatings obtained by closely related methods are compared. The optimum temperature of the metal during the deposition of the nylon film was found to be 225-250°C (see fig. 1 of the Enclosure). Deviation from this temperature sharply decreases the adhesion of the coating and its physical and mechanical properties. Sand blasting of the surface of the metal increases the strength of coupling between the coating and the metal. The best adhesion of nylon to steel is achieved when the particle size of nylon is in the 200-270 μ range (see fig. 2 of the Enclosure). Below 200 μ nylon is oxidized at elevated temperatures

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and above 270 μ it is poorly melted. Powders were produced by dissolution of nylon in caprolactam monomer, precipitation, extraction of solvent and drying. It was found that coatings obtained by different methods differ significantly in their durability. The most stable nylon coatings were obtained by the vibration method. "The authors express their gratitude to S. B. Ratner for his valuable advice." Orig. art. has: 4 figures.

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ASSOCIATION: none

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